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MARYLAND HEIGHTS

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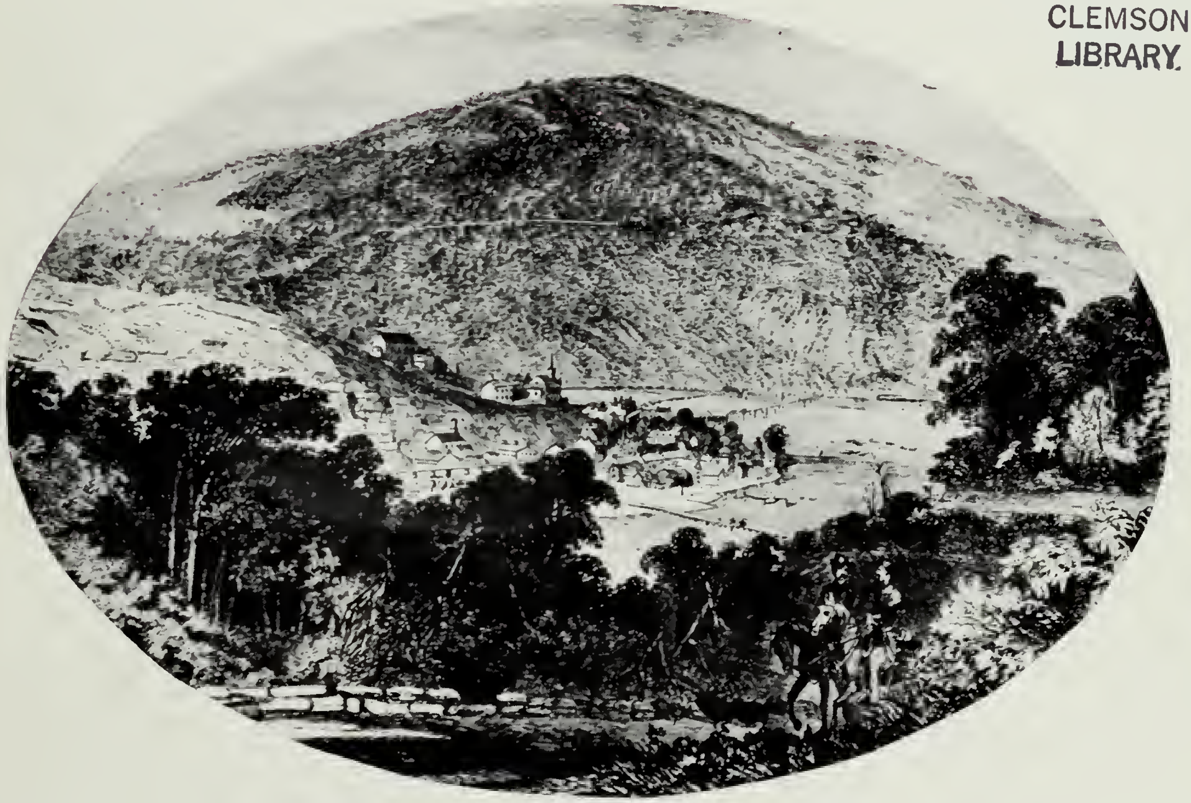

By

Susan W. Frye & Dennis E. Frye

Harpers Ferry National Historical Park

1989

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MARYLAND HEIGHTS

ARCHEOLOGICAL & HISTORICAL RESOURCES STUDY

By

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Report submitted to the National Park Service, National Capitol Region, under the auspice of the Cooperative Agreement between the National Capitol Region and the Department of Anthropology, University of Maryland at College Park.

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Craig and Sandy Roberts, current owners of the historic Unseld Farm, generously allowed us to use their property for access to the steep western reaches of the mountain. In addition, they maintained an avid interest in the project's findings and displayed a refreshing "good neighbor" policy to park staff. Special thanks for their control of "Snowball," whose canine instincts sometimes questioned our presence on his turf.

Special acknowledgement to the archeological crew, John and Cari Ravenhorst and Andrew Ippolito. These three "mountaineers" hiked dozens of miles through poison ivy, over copperheads, across bouldered slopes, and in and out of narrow ravines to examine and record every foot of Maryland Heights. Depending upon the season, they combatted frost bite, howling winds, ice and snow storms, gnat and tick bites, stifling humidity, sweltering heat, a forest fire, and twisted and bruised ankles. Undaunted by these minor inconveniences, the crew marched forward throughout the ordeal, carrying the transit god and stadia rod to thousands of points where no man had gone for a century. Meeting every challenge and sneering at cohorts who practiced "lawn-boy archeology," this crew made history by recording the history of Maryland Heights.

-- Susan W. Frye
Park Archeologist
Harpers Ferry National Historical Park

-- Dennis E. Frye
Park Historian
Harpers Ferry National Historical Park

ABSTRACT

The Maryland Heights Cultural Resources Inventory documented the extensive remains of historic sites on Maryland Heights, a 763-acre tract situated in Maryland and bordering the Potomac River. This mountain tract overlooks the historic town of Harpers Ferry, West Virginia, and lies within Harpers Ferry National Historical Park. The project involved both historical and archeological research. Work commenced in November, 1984, and was completed in July, 1988. This research revealed that the cultural history of Maryland Heights divides into three periods, categorized by industrial, military, and domestic uses.

During the first period, local ironworks cut the forests on Maryland Heights to manufacture charcoal for their blast furnaces and forges. Charcoaling on the mountain may have commenced as early as 1764, when John Semple, owner of Keep Triste Furnace on the south bank of the Potomac River, patented over 10,000 acres along Elk Ridge (including Maryland Heights). Maryland Heights lay neglected between Semple's death in 1773 and its purchase in 1810 by John McPherson and John Brien, owners of the Antietam Iron Works at the mouth of Antietam Creek. This ironworks charcoaled the mountain extensively until the early 1840s. In 1848, the Antietam Iron Works declared bankruptcy and began selling its holdings, including Maryland Heights.

Archeological survey recorded 57 charcoal hearths and 23 miles of charcoal roads on Maryland Heights. The hearths averaged 38 ft long by 28 ft wide and formed leveled platforms cut into the steep mountain slope. The charcoal roads divided into two types--sled roads and wagon roads. The steep, ill-defined sled roads supplied access from the woodlots to the hearth. The better-constructed wagon roads provided passage for wagons loaded with charcoal from the hearths to the base of the mountain.

The second historical period on Maryland Heights consisted of military occupation during the Civil War. Confederates under Col. Thomas J. Jackson constructed the first fortification on the mountain--a wooden stockade--during May, 1861. Following the Confederate evacuation of Harpers Ferry in June, 1861, Union forces intermittently held Maryland Heights. Federal occupation continued unchallenged until September, 1862, when Jackson returned to capture the Federal garrison at Harpers Ferry. After intense fighting on the crest of the mountain, Union troops received orders to withdraw, leaving Maryland Heights--and ultimately Harpers Ferry--in Confederate hands.

One week after the surrender of September 15, 1862, Union forces again reoccupied Maryland Heights. Realizing the importance of this strategic highpoint, the Federals began constructing a series of field fortifications along the crest and flanks of the mountain. By March, 1863, four new

fortifications--the 30-pounder Battery, Stone Fort, Interior Fort, and Exterior Fort--had been constructed and the Naval Battery, established in spring of 1862, improved. In mid-June, 1863, the Federals added two new positions--the 100-pounder Battery on the crest and the Spur Battery on the mountain's western slope. The last fortification, known as the Mortar Battery, was erected later that year.

The defenses of Maryland Heights received one major test during the war. On July 6-7, 1864, a contingent of Jubal Early's Second Corps demonstrated against the defenses from the north; but when the Federals refused to abandon their position, Early withdrew his army, declaring the defenses too strong to attack.

Archeological survey recorded seven fortifications and 13 campground areas within the park boundary on Maryland Heights. With the exception of the Stone Fort, where the stones were drawn to scale, detailed topographic mapping defined the size and appearance of each fortification. Within the 13 campground areas (totaling nearly 60 acres), archeological fieldwork recorded 319 individual features. Most of these features were defined as stone foundations, leveled platforms, or depressions. They represented the remains of tent platforms or foundations for log structures.

Domestic settlement defines the third historical period on Maryland Heights. Following the subdivision of lands owned by the Antietam Iron Works in 1848, private individuals purchased lots on the mountain and began developing them into small mountain farmsteads. Domestic settlement thus overlaps the military occupation of Maryland Heights, and continued well into the twentieth century.

The archeological survey discovered nine 19th-century domestic sites within the park and four additional 19th-century sites just outside the park boundary. Seventy-eight features were recorded within the nine sites located in the park. These included stone house foundations, cellar depressions, and stone walls.

The Maryland Heights Cultural Resources Inventory helps move Harpers Ferry National Historical Park toward full compliance with Executive Order 11593 and the National Historic Preservation Act of 1966, as amended, which requires all Federal agencies to identify and inventory cultural sites on Federal lands. This study will enable the park to better manage its cultural resources and to interpret them for the public.

CHAPTER I
INTRODUCTION

During the Civil War, Maryland Heights stood as a mountain fortress guarding the southern border of the Union. The black, threatening muzzles of heavy artillery peered into Virginia and the Confederacy, and the eyes of hundreds of bluecoated soldiers stared vigilantly across the Potomac.

From 1862 through 1865, Federal soldiers from Massachusetts, New York, Maryland, and nine other Northern states occupied the bald, bleak ridge which dominates the region surrounding Harpers Ferry. These Union men pitched dirt onto earthworks, dragged cannon up steep slopes, practiced aiming at targets, and witnessed enemy invasions around them. These same soldiers shoveled platforms for tents, moved rocks for parade grounds, cut trees for firewood, and cooked salt-pork in hot sizzling skillets. Maryland Heights bustled as an occupied fortress during the war between North and South.

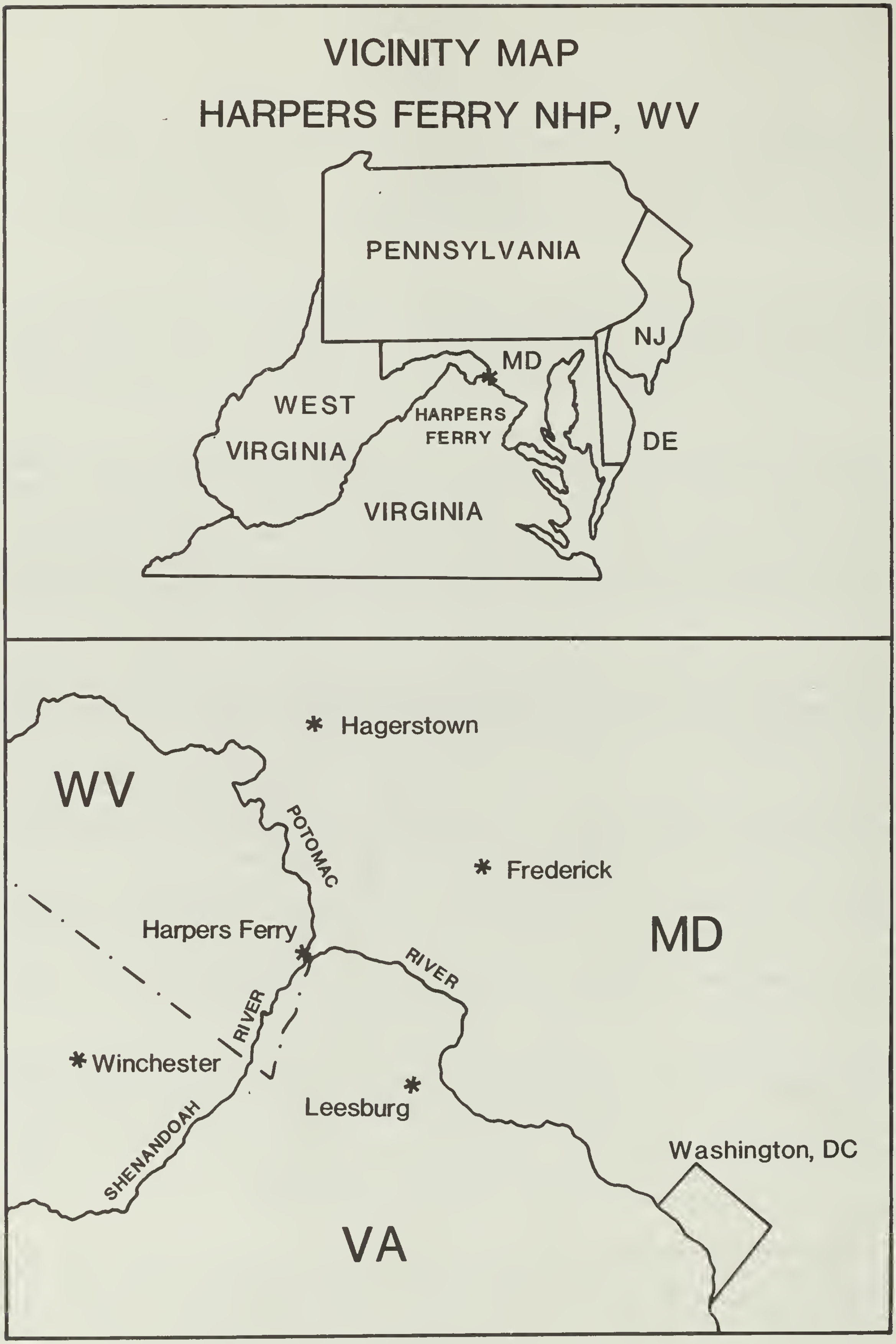
This activity ended abruptly when soldiers and guns departed the mountain three months after Lee's surrender, but behind them they left their forts and campgrounds as reminders of America's bloodiest war.

Today, the earthworks and stone foundations remain though hidden in the Maryland Heights' wilderness. Weathered and worn by time, these former defenses and makeshift homes now represent some of the best preserved Civil War fortifications and campgrounds in the United States.

Maryland Heights sits at the southern end of Elk Ridge directly opposite Harpers Ferry, West Virginia (Figure 1.1). Through the unwavering efforts of the Washington County (Maryland) Historical Society, in 1963 Harpers Ferry National Historical Park received a 763-acre donation from the State of Maryland which included most of Maryland Heights (Figure 1.2).

Initial National Park Service efforts to interpret Maryland Heights included preparation of several historic studies, removal of vegetation from the forts, and the development of a self-guiding trail. Unfortunately, the mountain's relative inaccessibility and its isolation from lower-town Harpers Ferry made it difficult to patrol and protect. As a result, illegal metal detecting and camping continued on Maryland Heights, vandalizing--and in many cases destroying--fragile cultural resources.

This destruction became apparent on January 6, 1983, when park historian Dennis Frye and archeologist Susan Winter guided National Capital Region Archeologist Dr. Stephen R. Potter over Maryland Heights. During a four-hour reconnaissance, this group discovered at least six campfire rings and 13 relic hunter holes which had seriously impacted cultural resources.


VICINITY MAP
HARPERS FERRY NHP, WV
PENNSYLVANIA
NJ
MD
WEST
VIRGINIA
HARPERS
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VIRGINIA
Hagerstown
WV
POTOMAC
Frederick
MD
Harpers Ferry
RIVER
RIVER
Winchester
Leesburg
SHENANDOAH
Washington, DC
VA

Figure 1.1

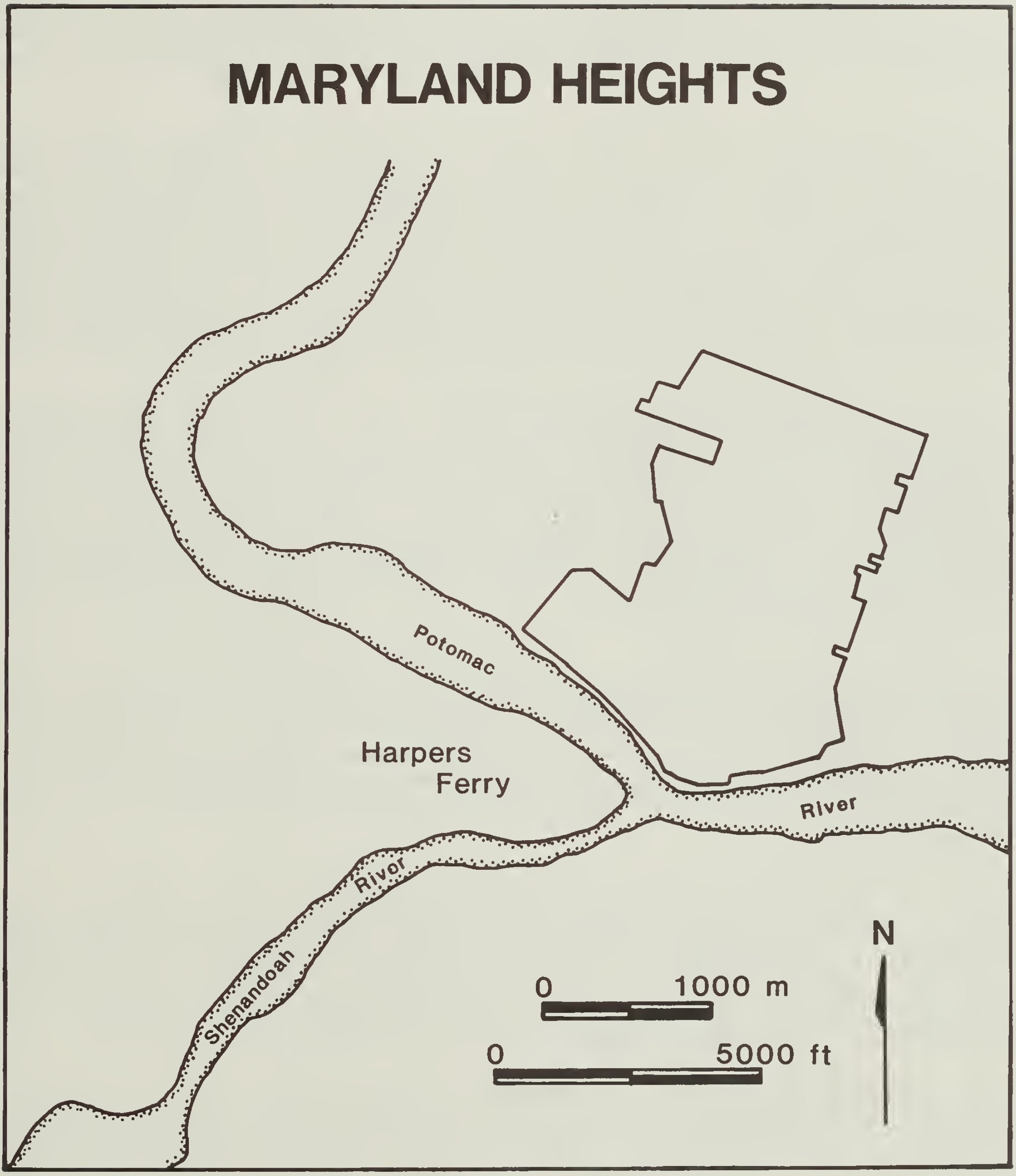

MARYLAND HEIGHTS
Potomac
Harpers Ferry
River
Shenandoah
River
0
1000 m
0
5000 ft
N

Figure 1.2

All of the campfire rings had been constructed of stone robbed from nearby fortifications or hut sites. In one case within the Stone Fort, the displaced stones had exposed a Civil War entrenching shovel which had been used as a lever during construction of the west wall in 1862. At the 30-pounder Battery (Six-Gun Battery), relic hunters had looted two Civil War dump sites, and in the process of digging had broken many period glass and stoneware bottles.

Concerned by the destruction of these irreplaceable cultural resources, the park identified the problem in its Resources Management Plan and supported Dr. Potter's efforts to obtain funding for a cultural resources survey and inventory of Maryland Heights. Through education, persistence, and diplomacy, Dr. Potter and National Park Service Chief Historian Edwin C. Bearss convinced the Region and the Washington Office of the seriousness of the threat to Maryland Heights and the need for an immediate study. Subsequently, in Fiscal Year 1985, CURE (cultural resources) funding was approved for a three-year project on Maryland Heights.

Historical research commenced in October, 1984. Archeological fieldwork began in April, 1985. Dr. Potter and Mr. Bearss served as co-principal investigators for the project. The interdisciplinary research team consisted of five people--park historian Dennis E. Frye; project archeologist director Susan Winter Frye; and staff archeologists John Ravenhorst, Cari Ravenhorst, and Andy Ippolito. All the archeologists worked for the University of Maryland through a cooperative studies program with the National Park Service.

Project objectives included: (1) development of a historic resource study combining historical documentation with archeological data derived from survey and site evaluation; (2) completion of cultural sites inventory forms; (3) production of a cultural resources base map; (4) an addendum to the existing National Register nomination for Maryland Heights; and (5) an enhanced List of Classified Structures (LCS) for Harpers Ferry National Historical Park.

The team completed the historic resource study in July, 1988. As a result, this project moves Harpers Ferry Park toward full compliance with Executive Order 11593 and the National Historic Preservation Act of 1966, as amended, which require all Federal agencies to identify and inventory cultural sites on Federal lands. This project also fulfills the requirements of NPS-28, "Cultural Resources Management Guideline."

This report categorizes the history of Maryland Heights by three uses: industry, military, and domestic. Charcoaling during the early 19th century represents the industrial use; the Civil War characterizes the military period; and small mountain farmsteads identify domestic occupations of the mountain.

Separate chapters have been written on the charcoal industry and domestic occupation. The Civil War era divides into three chapters--a historic overview, a discussion of fortifications, and a chapter on campgrounds. The latter two chapters subdivide into six sections. First comes an introduction, followed by a discussion of research methodology. Then appears separate sections on history and archeology. An interpretation of the similarities and discrepancies between the historical record and the archeological findings then precedes a summary and conclusion of each chapter. A management summary completes the report.

CHAPTER II
PHYSICAL DESCRIPTION OF MARYLAND HEIGHTS

Maryland Heights comprises the south end of Elk Ridge, a part of the Blue Ridge mountain system. The Heights overlook the confluence of the Potomac River and the Shenandoah River; the states of Virginia, Maryland, and West Virginia; and the town of Harpers Ferry. Elk Ridge extends northward from the Potomac River into Washington County, Maryland.

The eastern boundary of Washington County follows the crest of South Mountain, also part of the Blue Ridge. Between South Mountain and Elk Ridge lies Pleasant Valley. West of Elk Ridge, the county extends across the Hagerstown Valley, a part of the great limestone valley system of the eastern United States, to the Appalachian Mountains. The Mason-Dixon line, boundary between the states of Maryland and Pennsylvania, forms the northern border of the county. The southern boundary of both Washington County and the State of Maryland follows the Potomac River.

The geologic history of Maryland Heights and the surrounding area is extremely complex and incompletely understood. The geologic formations and their history affect the topography, hydrology, and soils available on the mountain. In turn, these geophysical attributes affected the types of activities--industrial, domestic, and military--that developed on Maryland Heights.

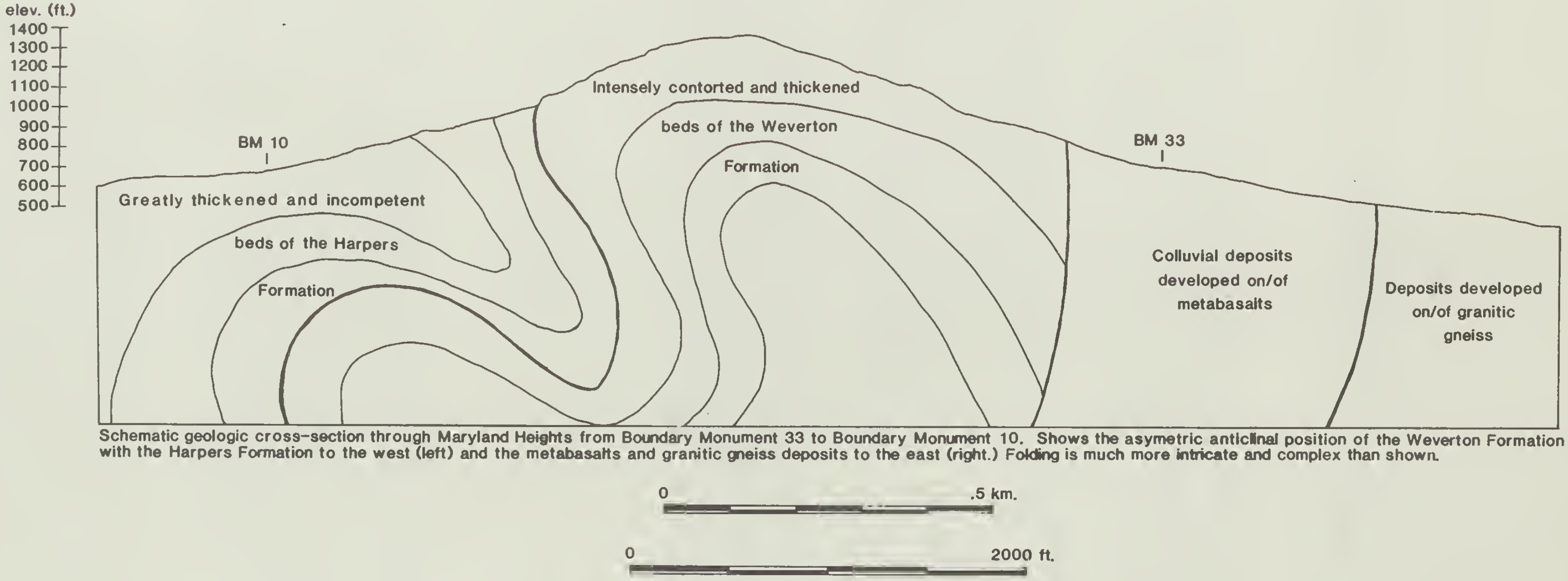
GEOLOGY

All of the Ridge, including Maryland Heights, forms part of the complex South Mountain anticlinorium, a large asymmetrical fold overturned to the west (Figure 2.1). The intense deformation of underlying formations in this anticlinorium affects the ability of individual beds to support themselves and the weight of overlying beds. As a result, complex fracture systems are found within individual formations and small, complex fault systems between formations. Throughout this anticline, the fracture systems and the cleavage planes in the rock layers dip to the east at various angles.[1]

Much of the Elk Ridge anticline is crested by a hard, resistant quartzite that comprises part of the Weverton formation (Figure 2.2). This anticline is met on the west slope by the Harpers formation phyllites (shales, slates, and related types of rock). Both of these formations date from the Cambrian and/or Precambrian eras--6.2 million to 1.42 billion years ago. On Maryland Heights, the contact zone between these two formations follows a line just north of the B&O railroad tunnel entrance. The town of Harpers Ferry is

MARYLAND HEIGHTS

GEOLOGIC CROSS-SECTION


elev. (ft.)
1400
1300
1200
1100
1000
900
800
700
600
500
BM 10
BM 33
Greatly thickened and incompetent
beds of the Harpers
Formation
Intensely contorted and thickened
beds of the Weverton
Formation
Colluvial deposits
developed on/of
metabasalts
Deposits developed
on/of granitic
gneiss
0
.5 km.
0
2000 ft.

Schematic geologic cross-section through Maryland Heights from Boundary Monument 33 to Boundary Monument 10. Shows the asymetric anticlinal position of the Weverton Formation with the Harpers Formation to the west (left) and the metabasalts and granitic gneiss deposits to the east (right.) Folding is much more intricate and complex than shown.

Figure 2.1

GEOLOGIC CONTACT ZONES IN THE ELK RIDGE

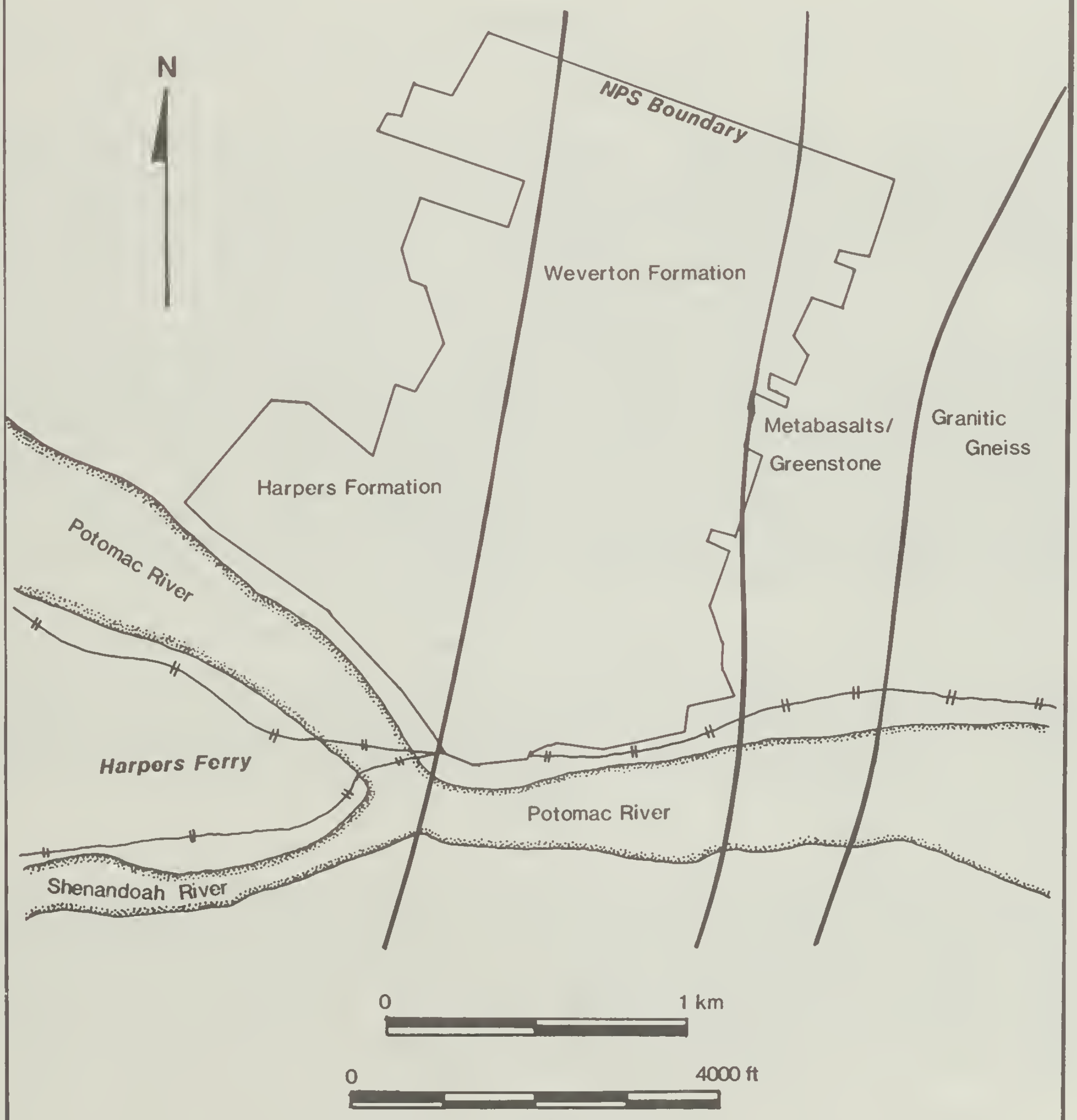

N
NPS Boundary
Weverton Formation
Metabasalts/ Greenstone
Granitic Gneiss
Harpers Formation
Potomac River
Harpers Ferry
Potomac River
Shenandoah River
0
1 km
0
4000 ft

Figure 2.2

built on Harpers shale and it is Harpers phyllite outcrops which are visible in both the Shenandoah and Potomac rivers just above their confluence.[2]

Along the lower east slope of the mountain the Weverton quartzite and sandstone meet with Precambrian metabasalts and granitic gneisses. On the west slope of the mountain the Harpers formation continues westward to meet with the Cambrian-aged sandstone of the Antietam formation.[3]

TOPOGRAPHY

The hardness, competency, and relationship of the materials composing Maryland Heights determine the observed topography on the mountain. The harder a material, the more resistant it becomes to water, wind, and weather erosion. The competency of a material is defined as the ability of that material to support its own weight and the weight of overlying beds and strata without fracturing--the more competent a material the less it fractures. The Weverton quartzites and sandstones along the crest and eastern slope are harder and more competent than the Harpers shales and slates to the west. Shale and slate usually are very incompetent and have closely spaced cleavages (fractures), while sandstones are generally more competent and have fewer cleavages spaced farther apart. Generally, quartzites are even more competent than sandstones. With any of these materials, however, much depends on impurities in the strata, the size of the individual grains of either deposition or crystallization, and the geologic forces to which the material has been subjected.

The differences in the hardness and competency of these various materials combine to give Maryland Heights a distinct ridge of quartzite along the crest and (due to interplay between fracture zones and fault systems) a series of ridges, small cliffs, and narrow plateaus running north-south on the west side of the mountain. The result of this topography is generally steep slopes with a rocky, acid, and thin cover of soils with low fertility and high erosion.

On the east side of Maryland Heights, the Weverton quartzite of the crest caps quartzitic sandstone, which extends down moderate to steep slopes to meet with the metabasalt and the granitic gneiss underlying Pleasant Valley. As a result, the east slope of Maryland Heights does not have the ridges and small ledges which characterize the west side. In addition, the east slope falls more quickly, and seemingly more steeply, to the valley below.[4]

The southern end of Maryland Heights consists of steep cliffs and stony slopes descending rapidly to the Potomac River. Both the quartzites and sandstones of the Weverton and the phyllites of the Harpers formations can be seen easily in these precipitous areas. The lands along the base of both sides of Elk Ridge are more fertile and less rocky than those on the slopes. On the east side of the mountain, these lands overlie metabasalts, greenstones and gneisses; shales, schists and gneisses underlay lands on the west side.

HYDROLOGY

The topography and soils on Maryland Heights do not support ponds or catch basins. As a result, much of the rain and spring waters is lost through runoff and evaporation, although some precipitation recharges the ground water system before eventually re-emerging in the springs. On the Heights, the fracture systems and cleavage planes of the various rock in the anticline have a great effect on the patterns of ground water movement. As might be expected, since all fracture systems and cleavage/bedding planes dip to the east, more springs empty on the east slope of the mountain, above Sandy Hook and Pleasant Valley, than on the west side. No springs are present on the crest or upper slopes of Maryland Heights.[5]

All springs on the Heights are affected by seasonal factors of temperature and precipitation. These are "wet weather" springs--i.e., springs that are not dependent on aquifers for recharge, but on the movement of local ground waters into the crevices and fracture systems. The storage capacity of soils around "wet weather" springs is low. These springs have an abundant flow in the spring time and a good amount in the autumn, but become dryer in the summer and the winter. Such springs often have a "flashy" flow for a short time after a rain has fallen. Many of these springs become little more that mossy seeps during the summer and several of them do not flow at all in the dead of winter.[6]

Several intermittent streams along the east and south sides of Maryland Heights originate from these springs. These streams flow toward Pleasant Valley or Sandy Hook, but have weak flows much of the year and even cease flowing during very dry or cold weather.

The few springs situated on the west side of the Heights are located either at the zone of contact between the Weverton quartzites and the Harpers shales, or within the fracture systems and faults of the shales. The one well-known spring on the west slope is located above the historic Unseld Farm, within the shales of the Harpers formation. It forms a small stream running south past the former Youth Conservation Corps camp and alongside the present fire road (Road U) to the C&O Canal. Like the other springs discussed above, it is affected by seasonal factors and runs heavier in the spring and late fall than in the summer and winter.

No evidence exists of the springs on Maryland Heights ever having been cleaned out or improved. In 1960, only two springs were recorded by the Maryland Department of Geology, Mines and Water Resources in this area--one in Sandy Hook and one near the southeast base of the mountain. The spring in Sandy Hook was recorded at an elevation of 285 feet above mean sea level (amsl), and issued from a granitic gneiss formation. The other spring was reported at 450 feet amsl, but with no other information available. No spring has ever been recorded by the state within the present Park boundary.[7]

No evidence exists of wells being dug or drilled on the Heights proper. Seven wells were recorded in Sandy Hook in 1960. Six of the seven extended into granitic gneiss and one into metabasalt. All wells sat at elevations between 280 and 300 feet amsl.[8]

Rainfall on Maryland Heights provides needed replenishment of ground water resources, but also causes problems with erosion. Since the soils on the mountain are thin, stony, and steeply sloped without a great deal of ground cover, they are very susceptible to erosion.

SOILS

According to a 1962 Washington County Soil Survey Report, the soils on Maryland Heights are generally shallow and very stony. In addition, they are strongly acid to very strongly acid, well to excessively well drained, and usually coarse to medium textured. Most of the soils are low in natural fertility and productivity, even as timber land. This low fertility is due in part to their parent material; more importantly, the steep mountain slopes are subject to such severe erosion and soil creep that significant soil development is prevented.[9]

Most of the soils on the crest of Maryland Heights developed from quartzites and sandstones. On the west side of the mountain, the soils originated primarily from schists, phyllite, and other shale-related materials. On the east side they evolved from quartzites, metabasalts (greenstone), and granitic gneisses.

The crest of Maryland Heights is comprised of stony rolling land and stony steep land (Figures 2.3 and 2.4). These lands are not defined as soils since they generally have very little soil between the stones, boulders, and outcrops of bedrock which characterize them. The slopes of stony rolling and stony steep land range up to as much as 35%. These stony lands, as well as being uncultivatable, are not suited for pasture and are of minimal use as timber land.[10]

A very stony loam of the Edgemont and Laidis soil series skirts the stony rolling lands and stony steep lands of the crest to the east, west, and part of the south. A very stony soil is one which contains enough stones ten or more inches in diameter as to make cultivation impractical, and the use of machinery impossible. This very stony loam developed from sandstones and quartzites. It is fairly shallow, strongly acidic, and has a low natural fertility. On Maryland Heights the slopes of this soil range from 5 to 35%. Soil such as this can be used for timbering and controlled grazing.[11]

Farther down slope on the east side of Maryland Heights are soils of the Highfield and Myersville series, which developed from metabasalt (greenstone). These series consist, for the most part, of loamy soils with slopes broadly ranging from 3 to 45%, but averaging from 20 to 30%. Most of these soils have a comparatively low acidity and extend to a moderate depth. The Highfield soils are very stony, have low to moderate fertility, and generally lie along the steeper slopes. The Myersville soils are naturally fertile and usually have slopes of 3 to 30%. On Maryland Heights, these two soil types are eroded to moderately eroded and occasionally are mixed with channery loams; in other words, they consist of between 15 and 50% flat fragments of stones up to six inches in length.[12]

Down slope on the west side of Maryland Heights, the soil series in evidence are the Hazel, Chandler, and mixtures of the Braddock and Thurmont soil series. The Hazel soils consist of channery silt loams developed on schist, phyllite, and other shaley materials. The areas where these Hazel soils appear on the mountain have slopes of 10 to 30%, are moderately eroded, and are of limited usefulness due to extreme acidity and shallowness. The Chandler soils also are mixed with channery silt loams and occur on similar slopes. These soils, although more deeply developed that the Hazel soils, are easily eroded if placed in crops, but can be used for orchards or pasture.[13]

The soil of the Braddock and Thurmont series mixture occurs on a small shelf just below the steep stony soils of the plateaus beneath the crest, and above the Hazel and Chandler soils which lie at the base of the mountain. This soil is comprised of a gravelly loam on slopes of 8 to 15%. It is developed on the acid, colluvial debris of metabasalt and quartzite and is suited for planting berries of orchards, but otherwise is eroded easily.[14]

SOIL LEGEND

▒	Stony steep land.
░	Stony rolling land.
▨	Edgemont and Laidig very stony loams, 5 to 35 percent slopes,
▓	Highfield very stony loam, 5 to 30 percent slopes.
░	Highfield very stony loam, 30 to 45 percent slopes.
▒	Myersville very stony loam, 3 to 30 percent slopes, moderately eroded.
░	Hazel channery silt loam, 10 to 20 percent slopes, moderately eroded.
☐	Hazel channery silt loam, 20 to 30 percent slopes, moderately eroded.
☐	Chandler silt loam and channery silt loam, 10 to 20 percent slopes, moderately eroded.
▒	Chandler silt loam and channery silt loam, 20 to 30 percent slopes,
▨	Braddock and Thurmont gravelly loams, 8 to 15 percent slopes, moderately eroded.

Soils information from the Washington County Soil Survey Report, United States Department of Agriculture, Soil Conservation Service, 1962, pages 17-47 and sheets 52-54.

Figure 2.3

SOILS ON MARYLAND HEIGHTS

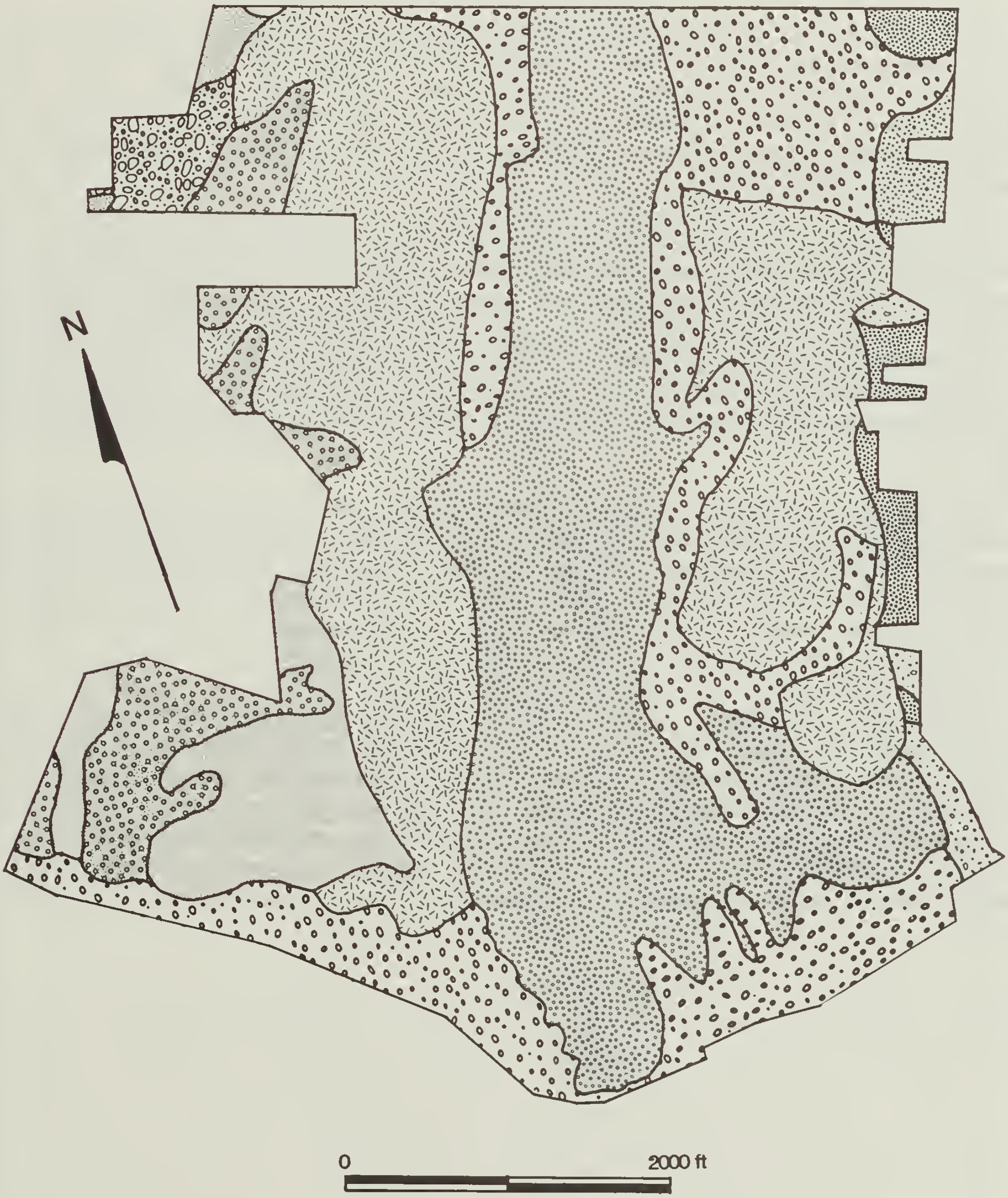


Figure 2.4

CONCLUSION

The geographical factors discussed above are greatly interdependent on each other and have influenced the flora, fauna, and human use patterns which have developed on Maryland Heights. In turn, some types of use patterns have caused changes in one or more of these geophysical factors, which then influenced later developments and the continued presence of specific flora and fauna.

A forest of mixed hardwoods originally covered Maryland Heights. The removal of this forest, and the periodic cutting of the subsequent regrowth, started a problem with erosion and a scrub growth cycle whose effects can still be seen. The alignment of bedrock ridges and outcrops, plateaus, cliffs, and water sources have influenced the placement of charcoal hearths, roads, Civil War fortifications, and domestic farm sites. These uses have contributed to the erosion and/or conservation of soil and vegetation regrowth.

The steep slopes and extreme stoniness of the mountain have influenced human activities. While these characteristics provide a commanding overview of the surrounding area and a ready supply of materials for construction of fortifications and buildings, they make transportation of people and goods difficult, the excavation of foundations and roadbeds an arduous task, and cultivation, especially by machine, almost impossible.

The extreme stoniness of the soils is the chief limitation for domestic use of Maryland Heights. This factor, along with other characteristics including the shallowness and immaturity of the soils, the degree of slope, the lack of dependable water sources, and susceptibility to erosion, combine to make the mountain only minimally successful as farm land. Marginally fertile, shallow lands were attractive only to poorer individuals and families who could not afford the more fertile and productive lands of the valley.

CHAPTER III
CHARCOAL INDUSTRY ON MARYLAND HEIGHTS

INTRODUCTION

Maryland Heights played an important role in industrial iron production in the Harpers Ferry area prior to the Civil War. The mountain initially formed part of the holdings of Keep Triste Furnace (1763-1810), located on the south bank of the Potomac River one mile above Harpers Ferry (Figure 3.1). It subsequently was acquired by the Antietam Iron Works (1810-1848), which operated about seven miles northwest of Harpers Ferry at the mouth of Antietam Creek. These ironworking establishments needed the timber on mountain land such as Maryland Heights for charcoal, which fueled all early blast furnaces and forges in America. The Antietam Iron Works charcoaled Maryland Heights extensively; the earlier Keep Triste Furnace may have exploited sections of that tract as well.

An extensive network of road traces and charcoal hearths remain today as testimony of this charcoaling operation. These hearths and roads were systematically recorded as part of the Maryland Heights Cultural Resources Inventory.

Archeological research at ironworking establishments first began in the 1950s and 60s at Saugus Iron Works in Massachusetts and Hopewell Furnace in Pennsylvania.[1] Throughout the past three decades, however, archeological investigations at industrial sites have tended "toward a bias in favor of the principal processing component. [As a result,] most archaeological reports deal exclusively with furnace stacks and their immediate environs."[2] Several aspects of ironmaking, including charcoaling, have been overlooked by most researchers. Data collected on charcoal hearths and road systems as part of the Maryland Heights project, therefore, provide new insights into charcoal production by early ironworks.

To facilitate discussion and interpretation of the charcoal-making industry on Maryland Heights, this chapter is divided into several sections. The first summarizes the technology of charcoal ironmaking, with particular emphasis on the two primary charcoal consumers--the blast furnace and forge--and the amount of charcoal demanded by each operation. The second section discusses the industry of charcoal manufacturing--the timber and land required, the charcoaling process, and the general physical characteristics and distribution of charcoal hearths. Then follows a documentary history of Maryland Heights under the ownership of Keep Triste Furnace and the Antietam Iron Works. Next is a discussion of the research design and field methodology developed for interpreting the charcoal industry on the Heights. A summary of fieldwork results follows. An

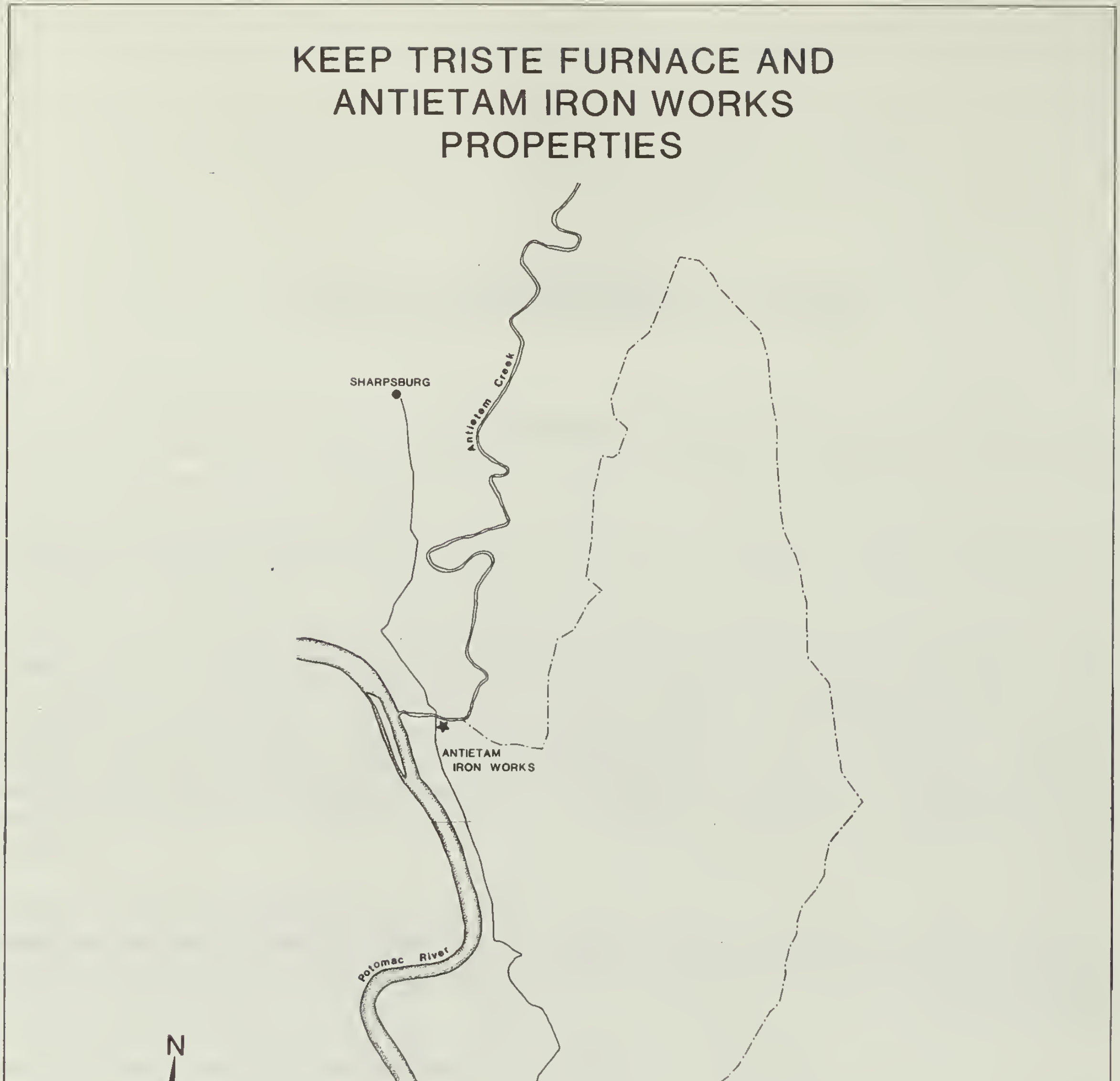

KEEP TRISTE FURNACE AND ANTIETAM IRON WORKS PROPERTIES
SHARPSBURG
Antietam Creek
ANTIETAM IRON WORKS
Potomac River
N
Harpers Ferry Road
ORE BANK
KEEP TRISTE FURNACE
MARYLAND HEIGHTS
HARPERS FERRY
Potomac River
Shenandoah River
John Semple's Lands
Antietam Iron Works Lands
0
2000 m.
0
8000 ft.

Figure 3.1

overall synthesis and interpretation of the charcoal industry on Maryland Heights concludes the chapter.

CHARCOAL IRON TECHNOLOGY

Prior to the fourth decade of the nineteenth century, all ironworks in America required four natural resources--iron ore, timber for charcoal, a flux (generally limestone), and waterpower. Although transportation to markets, whether local or foreign, helped determine the location of an ironworks, most furnaces and forges were constructed in relatively isolated areas close to the necessary resources. As a result of this isolation, early establishments were organized as self-sufficient plantations or communities that provided services to their workers in addition to manufacturing iron products.[3]

Early charcoal blast furnaces generally were constructed of stone in the shape of a truncated pyramid. The typical furnace averaged 25 to 35 feet in height with a base approximately 25 feet square.[4] The stack was constructed against a hillside so that ore, limestone and charcoal could be carried across a bridge and dropped in alternating layers into the open top of the lighted furnace. A waterpowered air blast fed the fire, which reduced the ore to molten iron. The furnace was tapped twice a day, and the molten iron released into long troughs known as pigs or poured into molds to create finished cast products such as pots, pans, and stoves.

Once in blast, a furnace operated continuously up to nine months, and occasionally longer. Furnaces generally shut down for the winter months when waterpower became unreliable.[5]

Blast furnaces consumed tremendous amounts of charcoal, much of it wasted in the inefficient, open-topped stacks. Estimates of the exact amount of charcoal vary between 150 and 240 bushels per ton of iron.[6] In 1810, the annual yield of pig iron averaged between 400 to 600 tons per furnace.[7] Using these minimum and maximum figures, the amount of charcoal required by an individual blast furnace varied widely, from a minimum of 60,000 bushels to a maximum 144,000 bushels of charcoal annually. These figures provide only a general guide, as some furnaces produced below the average, others above, and some furnaces were more efficient than others. By the 1850s, output had increased slightly to about 725 tons of pig iron per charcoal furnace.[8]

The production of pig iron formed an intermediate step between the reduction of iron ore and its refinement into bar iron. Bar iron is a malleable product worked into plates at a rolling and slitting mill or fashioned into tools and other needed items under the blacksmith's hammer. The refinement of pig iron into bar iron at a charcoal forge required several steps. First, the pig iron was heated at the forge in a finery hearth to a semimolten state, and then pounded under a large trip hammer to give the metal fibrous, ductile properties. The resulting bloom was reheated and hammered to produce an ancony, a thick iron bar with a rough knob on each end. Anconies generally were refined further in a chafery hearth and worked under the hammer into various-sized wrought iron bars.[9]

Between 150 to 250 bushels of charcoal were required to produce a ton of refined iron.[10] In a study of charcoal forges operating around 1830 in southeastern Pennsylvania, Paul F. Paskoff determined a mean annual output of 180 tons of bar iron per forge.[11] Working with this figure of 180 tons, an average forge consumed between 27,000 and 45,000 bushels of charcoal a year.

In America, charcoal remained the sole source of fuel at the blast furnace and forge until the fourth decade of the nineteenth century. In the 1830s some ironmasters began using two types of coal--anthracite and bituminous--to fuel their furnaces. Anthracite, a hard coal, was used in its natural state. Soft bituminous coal, on the other hand, contained gasses that required expulsion through the "coking" process (a process very similar to wood charcoaling). Conversion to these new fuels was slow as much prejudice remained in favor of charcoal iron.[12]

The charcoal forge could not sufficiently refine coal-smelted iron, as it acquired a number of impurities from the coal that were not found in charcoal. A new refining process, known as puddling, was developed to solve this problem. In the puddling process, pig iron was heated in a coal-fired reverberatory furnace in which the fuel did not mix with the metal; instead, "the heat generated by the coal fire was reflected ('reverberated') off the ceiling of the furnace into the metal." The resulting product, a pasty mass of wrought iron and slag, was pounded into rough slabs under a hammer. These slabs subsequently were reheated and formed into bars in a rolling mill.[13]

Wrought iron produced by this new method was inferior in quality to charcoal iron: "Puddled coke iron was a second-rate margarine to refined charcoal iron's butter. Moreover, the puddling process involved considerable fixed-capital investment--not . . . a favorable characteristic for a preindustrial environment."[14] Increased American industrialization in the mid-nineteenth century, however, opened new markets in which the indifferent quality of most coal-smelted iron did not matter.[15]

CHARCOAL-MAKING INDUSTRY

The production of charcoal played an integral role in the operation of any early ironworks. Ironmasters acquired large tracts of woodland, some more than ten thousand acres in extent, for charcoal manufacturing. Such large holdings were necessary, given the wide range of estimates given--100 acres to an astonishing 1,000 acres--for the amount of acreage consumed yearly.[16]

Although the acreage required to fuel a blast furnace each year remains a contested point, basic agreement exists that the land needed a minimum twenty-year regeneration period before it could be cut again. By multiplying the minimum and maximum estimates of the amount of charcoal required annually by an average blast furnace (60,000 and 144,000 bushels, respectively), David C. Mudge determined that timber holdings of 3,400 to 7,700 acres were necessary to keep a furnace in blast. Additional land was needed for agricultural use and to allow for unsuitable timber, open spaces, and forest fires. The large size of charcoal iron plantations therefore is not surprising. In addition to cutting their own land, ironmasters also purchased wood and/or charcoal from surrounding landowners.[17]

The charcoaling process began with cutting the forests. Timber was felled during the winter months, when the furnaces generally were out of blast. The woodchoppers clear-cut the land and ranked, or piled, the wood into cords. An acre of land generally produced about 30 cords of wood, although estimates as low as 20 cords and as high as 40 cords have been given.[18] The amount varied according to the topography and the type of wood. Not surprisingly, less timber grew on steep hillsides, rocky areas, and swamps. Hardwoods produced the best charcoal, with elm and hickory the most prized, but oak the most plentiful.[19]

Although cut in the winter, the wood was not charcoaled until the summer months, after it had seasoned and shortly before it was needed. The charcoal houses near the furnace could only store a relatively small amount, and as charcoal exposed to the elements spoiled, ironmasters did not want the fuel produced at a rate much faster than that of consumption.[20]

In addition, charcoal making required dry weather with a minimum of wind. As a result, most charcoaling was conducted from May through October. The importance of charcoal in the iron-making process meant that its production schedule determined to a large extent the rhythm of pig iron and bar iron production.[21]

Charcoal hearths were located as closely to their wood supply as possible:

> An open level spot was chosen, and much care was taken that the surface of the hearth was hard and smooth so as to afford good shoveling and raking of the coal. If one side of the chosen location slanted downhill the opposite side was dug out enough to make the fill on the lower side absolutely level. The hearth had to be level to assure uniform burning.[22]

The hearth also required protection from winds, and often was constructed in a hollow or in an area protected by trees.[23] All stones and vegetation were removed from the hearth to ensure a smooth working surface. In addition, "great care should be taken that no spring, or water of any kind, is in the neighborhood of the [charcoal hearth], and that sudden gusts of rain shall not overflow it."[24] Thus, a spot as dry and level as possible was sought, although an accessible water supply was desirable.[25]

Once constructed, a hearth was used over and over again. In fact, hearths improved with age and use because of an accumulation of charcoal dust and tar that aided the next burning: "In view of this it is an important rule, when one has succeeded in finding a good hearth, to make use of this as long as possible, even though the wood has to be hauled from a distance, increasing the expense of labor and transport."[26]

In general, constructing hearths on steep slopes or in low, swampy areas was considered undesirable and entailed greater expense than building them on dryer and more level surfaces. G. Svedelius described one method for building a hearth on a slope:

> We must first find a secure foundation on the lower side, on which to build up a wall of logs to the necessary height. Upon this wall we then lay a floor of split wood, which we cover with bark or moss. Finally the whole is covered a foot deep with sand or clay, or still better with a mixture of both, which covering must be well packed. Partly on account of sinking, and partly to prevent a stronger draught from the lower side of the hill, the edge of the hearth should be somewhat higher on this side than on the other.[27]

As a rule, charcoal hearths were circular and ranged from 30 to 50 feet in diameter. At Hopewell Furnace in eastern Pennsylvania, hearths averaged 30 to 40 feet across. A hearth 40 to 50 feet in diameter permitted construction of a wood pile about 30 feet in width.[28]

A road wide enough for a sled ran through the center of the charcoal hearth. The wood hauler drove into the hearth, unloaded the wood around the edges, and journeyed out the other side in pursuit of another load.[29]

> A mule, a horse, or even an ox was used to drag [a] rustic wood sled which, when loaded, would carry perhaps half a cord. The haul from the ranks to the hearth was made as short as possible and always downhill. Hearths were placed so that they were at the bottom of a rise.[30]

The sleds were crudely built of wood, with wooden runners extending the five foot length of the sled (Figure 3.2).

Once the wood had been stacked around the edges of the hearth, the collier began setting the pieces for charring. He first constructed a chimney in the center, and then arranged the wood on end around this chimney in several tiers, forming a rounded mound when complete. After the pile had been constructed, very little open space remained between the pieces. A layer of leaves thrown over the wood covered the mound. The collier then sealed the wood and leaves from outside air with a thick mantle of charcoal dust (Figure 3.3). The chimney was filled with wood chips and other inflammable materials, lighted from the top, and covered over.[31]

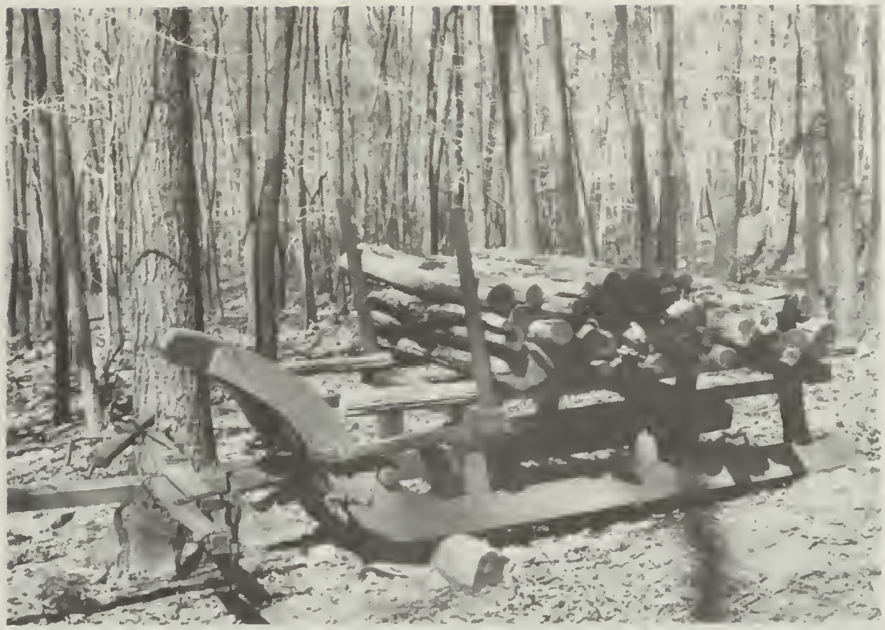


Figure 3.2 Example of a wood sled from Catoctin Mountain Park.

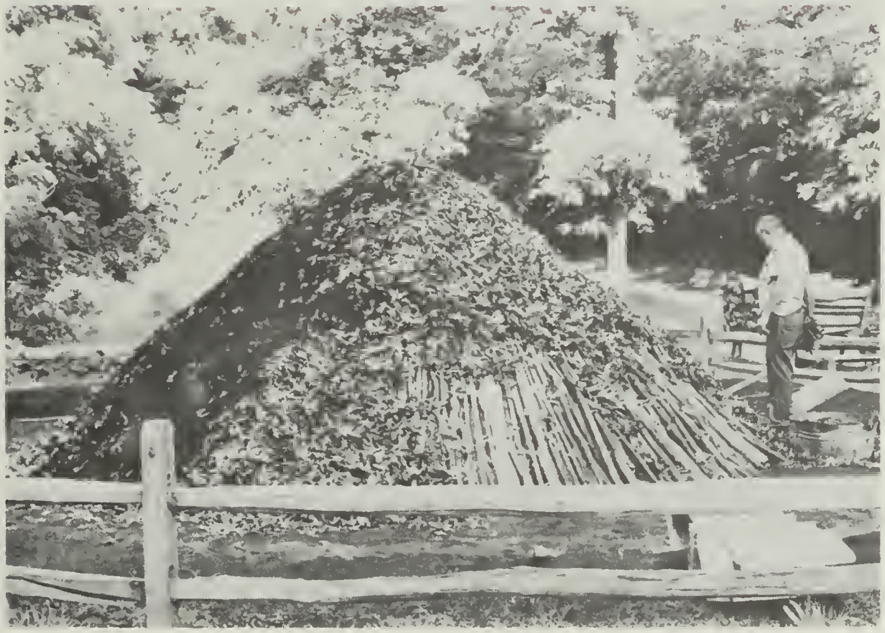


Figure 3.3 Charcoal pit under construction at Hopewell Village National Historic Site. Note neatly-stacked wood under partial covering of leaves, which in turn is covered by a layer of charcoal dust.

While burning, the charcoal pit required constant attention to prevent fire from burning through the outer layers of leaves and dust (Figure 3.4). An open flame reduced the wood to useless ash, whereas the exclusion of air forced the reduction of hydrogen and oxygen from the wood, leaving the carbon, or charcoal, behind.[32]

The time necessary to char a pile varied according to the nature of the wood, the weather, and the skill of the collier.[33] Another important variable was the size of the charcoal pit. From his study of charcoaling at Hopewell Furnace, Jackson Kemper determined that a hearth which held about 30 cords of partly seasoned wood normally burned for 10 to 14 days.[34] Fred W. Shearer asserted that "the ordinary pit of thirty-five cords required about ten days for burning in late summer and early fall if the wood had been cut the previous winter. The time varied, sometimes less than ten days and sometimes it extended to sixteen days."[35]

The number of bushels of charcoal produced per cord of wood also varied according to the quality of the wood and the skill of the collier. Thirty-five to 40 bushels per burning was considered a very good yield.[36] As a rule, an acre of timber yielded between 520 and 1,200 bushels. Thus, an ironworks required 50 to 276 acres of timberland annually if, as stated above, the average antebellum blast furnace consumed between 60,000 and 144,000 bushels of charcoal a year.[37]

A charcoal hearth 30 to 40 feet in diameter held 25 to 50 cords of wood--the yield of an acre or more of timber.[38] Such a hearth, if it produced 35 bushels of charcoal per cord, yielded between 875 and 1,750 bushels of charcoal per burning.

The demands placed on the colliers during the burning period necessitated that they live near the charcoal hearths. Rude, conical huts fashioned of poles, leaves, and dust served as temporary quarters (Figure 3.5). These huts measured about eight feet in diameter at the base and about ten feet in height. A small door faced the hearth side of the hut. Some huts included stone chimneys, while others had wood stoves installed.[39]

Each collier, assisted by one or two helpers, tended up to nine charcoal hearths at a time, visiting each of the hearths several times a day. A single furnace may have required as many as twelve colliers. Because of their skills, colliers were among the highest paid workers within the ironworking community.[40]

Kemper states that at Hopewell Furnace, charcoal hearths were located about the distance of one city block from each other throughout various charcoal tracts. In contrast, hearths at Catoctin Furnace tended to be isolated or clustered within several hundred feet of each other.[41]

Charcoal hearths were situated in proximity to the furnace or forge they served. According to Peter Temin, "as late as 1874, [charcoal] ordinarily was transported only 2-5 miles."[42] Although this statement has been challenged, particularly in reference to the second half of the nineteenth century, early ironworks located in isolated, rural areas and depending

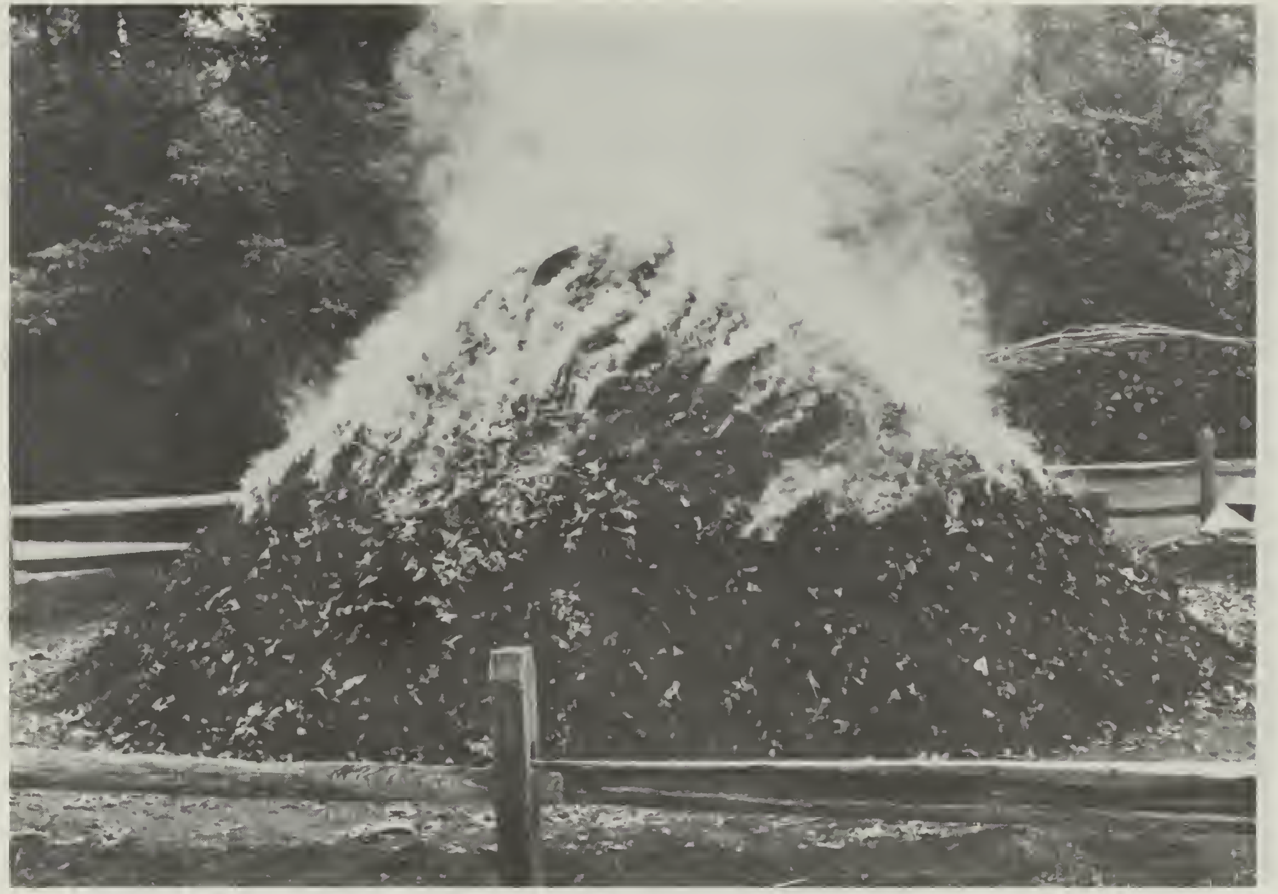


Figure 3.4 Charcoal pit in process of burning. Note that charring moves from top to bottom of pile.

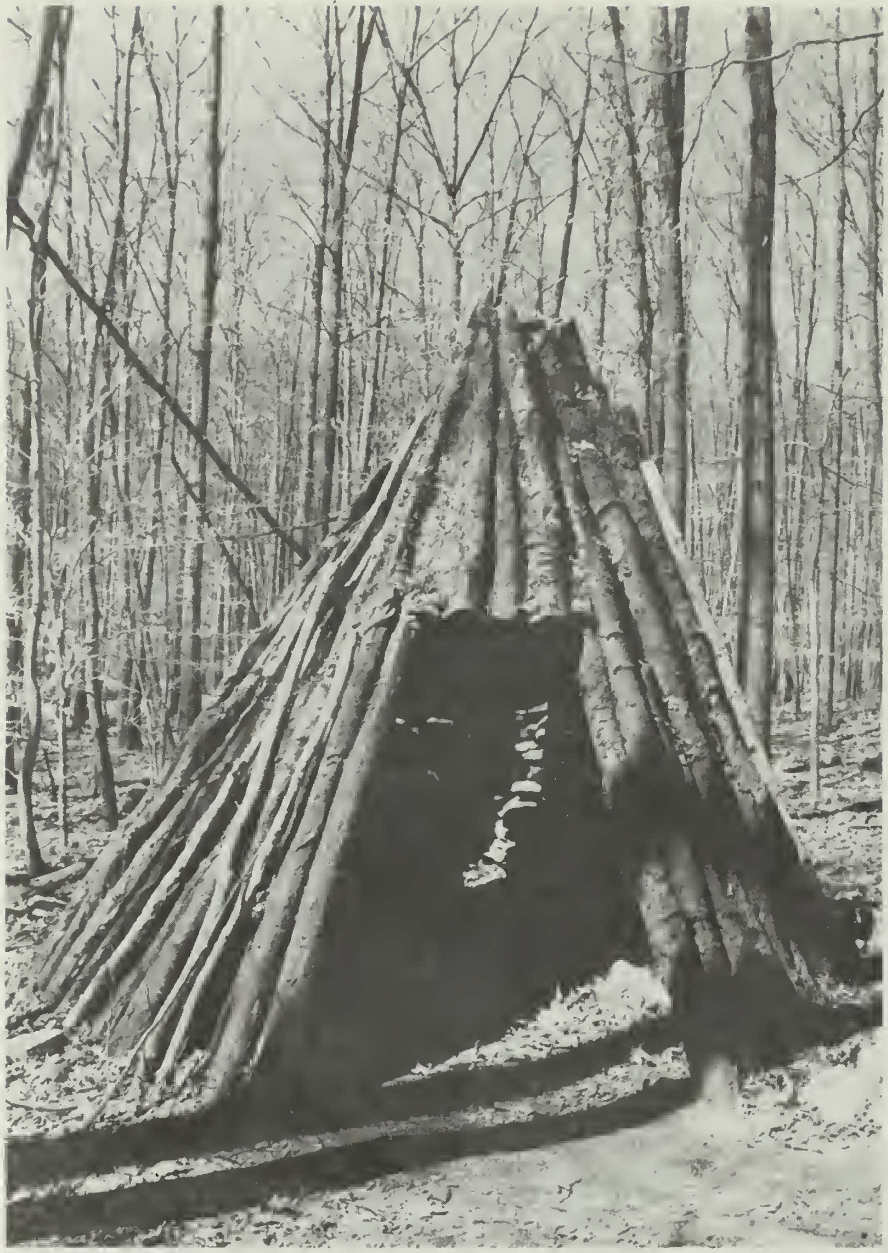


Figure 3.5 Reconstructed collier's hut at Catoctin Mountain Park, Thurmont, Maryland.

upon crude road systems needed their charcoal supplies close by. The charcoal was transported from the hearths to the ironworks in high-sided wagons. At Hopewell, the wagons held from 100 to 300 bushels of charcoal.[43]

Charcoal manufacturing occupied a critical role in the operation of all antebellum charcoal furnaces and forges.

> The sequence of operations involved in the making of charcoal at a furnace or forge was always the most time-consuming and . . . the single most expensive aspect of iron-making. More than half the work force at a furnace of forge was directly or indirectly concerned with the production of charcoal.[44]

Although wasteful by modern standards, the charcoaling techniques practiced on early iron plantations complimented the pre-industrial setting and technology of these ironworks. These furnaces and forges were small in size and output. They served restricted local markets that were easily saturated. The advent of industrialization and new, more efficient methods of iron production with different fuel requirements gradually forced out the inefficient production methods of the plantation system and the time-honored techniques of making charcoal.

HISTORICAL BACKGROUND: KEEP TRISTE FURNACE AND THE ANTIETAM IRON WORKS

A primary concern of early settlers in colonial America was the creation of small manufacturing establishments, in particular ironworks. As early as 1621, colonists had erected an ironworks in Virginia along the James River; however, this enterprise quickly failed. The first successful ironworks was constructed on the Saugus River in Massachusetts in the 1640s.[45]

The iron industry did not secure a permanent foothold in Maryland and Virginia until the first decades of the eighteenth century. These early furnaces and forges generally embraced navigable waters along the Chesapeake Bay and produced iron for export to Great Britain. As settlement advanced westward, ironworks construction expanded into hinterlands away from the coastal areas. Poor transportation systems and growing settlement redirected these newly erected furnaces toward localized, domestic markets.[46] In the mid-eighteenth century, entrepreneurs erected a substantial number of ironworks within the lower Shenandoah Valley of Virginia and the Hagerstown Valley of Maryland.[47]

Keep Triste Furnace and Frederick Forge

In 1750, a Scottish merchant named John Semple moved to Maryland as the resident partner in a tobacco firm initially known as Jamieson, Semple & Lawson, and later as Lawson & Semple. Over time Semple's interests shifted from tobacco to iron. In 1762, he formed a partnership with John Ballendine at the Occoquan Forge in Prince William County, Virginia.[48]

John Semple did not confine his ironworking interests to Occoquan Forge. In June, 1763, he began purchasing land in the western reaches of the Potomac River Valley with the intention of erecting a blast furnace. Semple's initial purchases included 1,675 acres in Virginia near the confluence of the Potomac and Shenandoah rivers and a nearby 116-acre tract on the north bank of the Potomac known as Ore Hill. Shortly after acquiring these properties, Semple constructed Keep Triste Furnace on the south bank of the Potomac River one mile west of present-day Harpers Ferry (Figure 3.1). In 1765, he enlarged the furnace estate with the purchase of an additional 400 acres along the Elk Branch and a 100-acre tract that included another large ore bank.[49]

In February, 1763, shortly before John Semple began purchasing land for Keep Triste Furnace, four Maryland businessmen--Samuel Beall Jr., David Ross, Richard Henderson, and Joseph Chapline--formulated articles of agreement "as Partners each for one fourth Part towards takeing [sic] up and Purchasing Lands on the waters of Antietam [Creek] & Potomack river and elsewhere convenient in Frederick County [Maryland] for the Erecting of Iron Works furnaces and forges."[50]

Richard Henderson, like Semple, was a native of Scotland who had moved to Maryland as a factor for the mercantile firm John Glassford and Company. Joseph Chapline was born into a prominent Maryland family and educated in England. He settled on a large tract of land in western Maryland near present-day Sharpsburg.[51] Both Ross and Beall were merchants, but otherwise remain obscure.

Chapline's large land holdings were crucial to the formation of the new company. Initially Chapline refused to sign the articles of agreement, fearing he would not receive adequate compensation from the other members for his property. The four men apparently overcame this difficulty, however, and joined together on February 4, 1763, in a partnership for constructing an ironworking establishment in western Maryland. Joseph Chapline conveyed all his warrants to lands east of Antietam Creek and west of South Mountain to the partnership, with Beaver Creek forming the northern boundary of the conveyance and the Potomac River the southern extent.[52] Within these bounds lay Maryland Heights.

As an additional step in realizing the contemplated ironworks, Samuel Beall, Jr., received a writ of ad quod damnum from the Lord Proprietary of Maryland on September 2, 1763, for twenty acres "at about one Quarter of a Mile distance from the Mouth of Antietam Creek" for the purpose of constructing an ironworks.[53] This legal act enabled Beall to purchase the land if the present owners were unwilling themselves to construct an ironworks or mill on the property in question. In turn, the writ required Beall to begin construction of the ironworks within six months of his purchase and to have it completed within four years.

Beall and his partners apparently had not begun constructing their proposed ironworks by January, 1764, for in that month John Semple purchased several tracts near the mouth of Antietam Creek, including much of the twenty acres assigned to Beall, from their original owners. Within a short period, Semple began building a forge on his new property. At the same time, Semple also patented a 10,202-acre tract called Keep Triste that encompassed most of Elk Ridge--including Maryland Heights--and clearly fell within the bounds of the conveyance Joseph Chapline had made to his partners.[54]

To settle the question of who actually owned the forge seat and the lands included within Chapline's claim, Beall and his partners appeared before the Maryland Provincial Court to contest Semple's ownership. A partition was agreed upon in September, 1764. John Semple surrendered his rights to the north part of Keep Triste and the land along Antietam Creek, including "all the Improvements he has made . . . towards building a forge, Grist mill and saw Mill." For their part, Beall and his partners gave up all claim to the south half of Keep Triste (which included Maryland Heights). In addition, they agreed to cede to Semple the southern part of a large tract known as Little I Thought It, located on the west side of Keep Triste.[55]

Although Semple conveyed the forge to Beall and his partners, all parties agreed Semple would cover half the operating expenses the first two years the works were in production. Conversely, Semple would share any profits realized by the forge. The provision also was made that Beall & Company would receive payment for wood cut from their lands during the two years of the joint partnership, suggesting that at least some of the charcoal for Keep Triste Furnace was not coming from Semple's own lands.[56] In addition, Semple was to supply the forge with 300 tons of pig iron a year from the furnace, or a lesser amount if he could not manufacture that amount or the forge could not use it. Semple would be paid £4 for each ton delivered to the forge.[57]

The partnership between Semple and the new owners of Frederick Forge (as the ironworks on Antietam Creek then was known) proved stormy. Arbitration finally forced the agreed upon partition of Little I Thought It and Keep Triste in 1767.[58] Disputes over the supply of pig iron to Frederick Forge continued into 1769. Semple had not been furnishing the prescribed amount of iron to the forge, forcing its owners to purchase iron from the distant Antietam Furnace located at the base of South Mountain northeast of Hagerstown. Outside arbitrators concluded that Semple and Ross & Company should continue the initial agreement signed in 1764 so long as Frederick Forge remained under its present ownership or until the company constructed a furnace of its own. To ensure that the agreement would not be broken again, liens were placed on the properties of both Semple and Ross & Company in 1769.[59]

Further troubles arose in 1770, requiring additional arbitration by George Washington and others. Washington described the dispute as "a very disagreeable" one, but apparently it was resolved in April, 1771. Disagreements between the partners probably ended only with the death of John Semple in September, 1773.[60] It also is likely that Ross & Company had constructed their own blast furnace at Frederick Forge by this date.

Estate of John Semple

John Semple was deeply in debt at the time of his death. Semple owed his largest debt--£21,112 and 214,026 pounds of tobacco--to his brother-in-law and Scottish trading partner, James Lawson, and his associates. In 1769, Lawson had secured a mortgage from Semple for his properties in Virginia and Maryland. Shortly after Semple's death, Lawson returned to Scotland to begin the long process of untangling his brother-in-law's estate.[61]

Semple also owed a large sum of money to Philip Ludwell Lee. At the time of Semple's death, Lee held a mortgage on the Virginia portion of the Keep Triste Furnace holdings. Lee subsequently leased this property to James Lawson for three years. Keep Triste Furnace apparently ceased production within a short time, for no record exists of iron production at this establishment during the American Revolution. After a protracted court battle, the mortgage on the Virginia part of Keep Triste Furnace was foreclosed and the land sold to Henry Lee in 1790.[62]

Resolution of James Lawson's mortgage on Semple's properties in Washington County, Maryland, known by this time as Sample's Manor (a corruption of Semple's name), required an even greater length of time. Following John Semple's death in 1773, these lands underwent a long period of heavy depredation and trespassing by the local populace:

> ever since the revolution [Sample's Manor] has been considered as belonging to nobody, that it would not pay the debts due on it; and many persons have gone on it and committed for many years past the utmost waste and destruction, by barking the trees and selling the Bark, and quantities of rails, shingles, wood and doing every species of waste; and this has generally increased within the last four years and diminished the value of the Land--that the Elk Mountain runs thro the tract and makes at least 9/10ths of it, no part of it arable, and much of it not accessible . . . [and] the lines of that tract are almost all in definite [sic] where the land is worth any thing--that the Manor is of no use or profit except to an Iron Works as supply of wood, which is terribly cut down and destroyed.[63]

On February 1, 1800, Lawson filed a request in the Chancery Court of Maryland asking that Sample's Manor be sold to help cover the debts owed by Semple's estate. To prevent continued trespassing during the lengthy court process, Lawson filed a second suit in 1809 and won an injunction prohibiting further destruction of the timber.[64]

Eventually, the 8,081-acre estate was divided into twenty lots and sold at public sale on February 26, 1810. John McPherson and John Brien, owners of the Antietam Iron Works, purchased all twenty lots for $8,852.82.[65]

The United States government apparently acquired wood and charcoal from Sample's Manor prior to its purchase by McPherson and Brien. Samuel Annin, Paymaster of the U. S. Armory at Harpers Ferry, noted in 1811 that "much more Charcoal is used at the works now, than two years ago was calculated on, & no supply need be counted on from Maryland which formerly was the case."[66] The Armory may have charcoaled Sample's Manor as early as 1801, the year weapons production began.

Antietam Iron Works

Frederick Forge became known as the Antietam Iron Works after the addition of a blast furnace circa 1770-1773. By 1782, Richard Henderson had become the sole surviving member of the original 1763 partnership. Henderson retained a controlling interest in the company until his death in 1806, at which time financial difficulties forced his new partners to sell the Iron Works and 7,700 attached acres to John McPherson and John Brien.[67] The addition of Semple's lands in 1810 doubled the size of the Iron Works to approximately 15,850 acres.

McPherson and Brien apparently prospered, for in 1820 they purchased a second ironworking establishment--Catoctin Furnace--in Frederick County, Maryland. Whereas the Antietam Iron Works concentrated on producing refined bar iron, Catoctin Furnace manufactured pig iron and castings exclusively.[68]

A manufacturing census recorded in 1820 reported that the furnace at Antietam consumed 260,000 bushels of charcoal annually and the forge 13,000 bushels.[69] The census records, unfortunately, did not specify the amount of pig and bar iron produced. This same enumeration did show, however, that the forge processed 450 tons of pig iron, which would have produced a minimum of 300 tons of bar iron. Manufacture of this amount of bar iron required 45,000 to 75,000 bushels of charcoal--much more than the amount recorded in the census for the forge.[70]

McPherson and Brien added a nail factory and small rolling mill with two "heating furnaces" to the Iron Works around 1831.[71] Shortly thereafter, in 1833, John McPherson died. McPherson's grandson, John McPherson Brien, acquired his half interest in Antietam. John McPherson Brien purchased the remaining half interest in 1840 after a protracted equity court battle following the death of his father, John Brien, in 1834.[72] For the first time, the Iron Works operated under a single owner.

In 1840, the furnace produced 1,476 tons of pig iron and the forge/rolling mill 970 tons of bar iron. Together, the furnace and forge consumed 300 tons of an undefined fuel.[73] These relatively high production figures, given in an 1840 census of manufactures, suggest improvements had been made to the furnace stack. According to a directory of iron and steel manufacturers published in 1880, a new stack was constructed at the Iron Works in 1838, fueled by coke rather than charcoal.[74] However, an 1859 directory entitled The Iron Manufacturers Guide, stated that the stack was rebuilt in 1845 and used both coke and charcoal.[75]

Whether both these accounts are correct remains uncertain. Coke-fired furnaces were a brand new technology in the United States in 1838. The first coke furnace in this country had been erected only one year previously, at Lonaconing in western Maryland. In addition, the C & O Canal provided the only cheap means of conveying coal to Antietam, but data on when the Canal began transporting coal and how much it transported did not become available until 1841.[76] Lastly, the Iron Works employed 250 people in 1840, a large number which likely reflected the numerous men required to carry on a charcoaling operation.[77]

A letter written in 1853 by a later owner of the Antietam Iron Works, William B. Clarke, provided evidence that charcoal continued in use at the Iron Works throughout the 1840s. In reference to an ore bank located on the Virginia side of the Potomac River, Clarke stated "I am advised this ore is not necessary to the manufacture of iron by coke which is used now altogether at the works. Brien in his lifetime deemed them important as he made charcoal iron."[78] The Iron Works certainly was using coal to some extent by 1842, however, because a mortgage dating from June, 1842, listing many of the materials stored at the Iron Works included "about ten thousand cords of wood [and] about thirty thousand bushels of stone coal."[79] This listing of large amounts of both coal and wood suggests that some operations at the Antietam Iron Works remained charcoal fueled, but that others had converted to fossil fuels.

To raise enough money to purchase the second half interest in the Iron Works following the death of John Brien, John McPherson Brien had indebted himself heavily to Robert Gilmor, a Baltimore merchant (Figure 3.6). As security for this loan and other debts owed to Gilmor, Brien mortgaged the Antietam Iron Works and Catoctin Furnace. He subsequently defaulted on his payments, forcing Gilmor to foreclose and take possession of the Iron Works in May, 1843, shortly before Brien entered bankruptcy proceedings. Ironically, John McPherson Brien remained as manager of the Iron Works.[80]

The Antietam Iron Works continued operating until January, 1848, when all work was suspended and the workmen discharged. Within a short time, Gilmor received permission from the Chancery Court of Maryland to sell the Iron Works. None other than John McPherson Brien purchased the property through a private sale after somehow raising security on $110,000.[81]

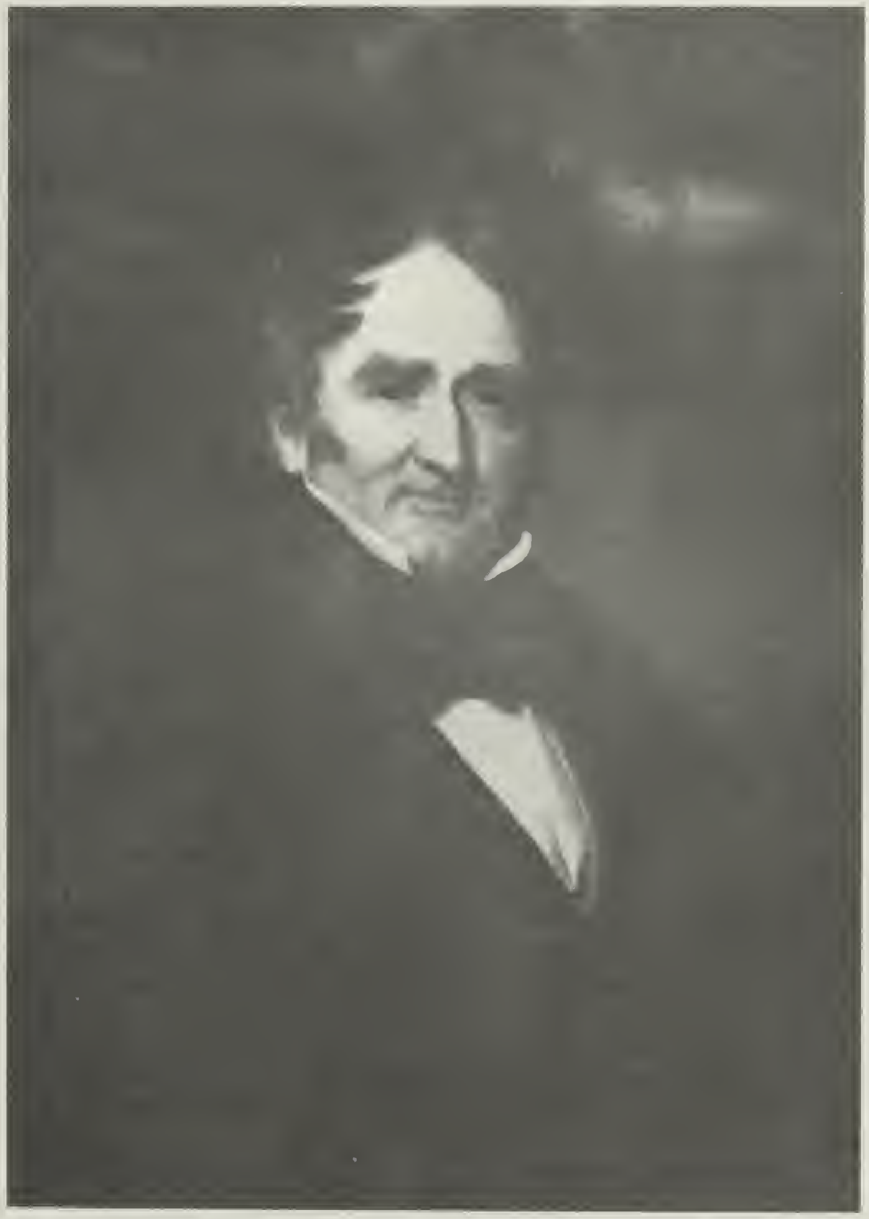


Figure 3.6 Robert Gilmor II, Owner of the Antietam Iron Works from 1843 to 1848 (Collection of the Maryland Historical Society, Baltimore)

As part of the purchase agreement, Brien was granted permission to sell portions of the Iron Works property before he finished paying for it. Almost immediately Brien subdivided 13,000 acres into approximately 250 lots and began selling those most distant from the Iron Works, including those on Maryland Heights.[82] Brien probably sold this land to raise money toward the purchase price.

John McPherson Brien died within a year of recovering the Antietam Iron Works. In 1854, his mortgaged estate was sold once again to satisfy creditors. William B. Clarke of Baltimore purchased the ironworks and 1,186 acres for $40,000, ending a colorful era in the history of the Antietam Iron Works.[83]

CHARCOAL HEARTH DESCRIPTIONS

Research Design

Charcoal hearths, road traces, and other features associated with the charcoal industry on Maryland Heights were recorded as part of the Maryland Heights Cultural Resources Inventory. The primary objectives of the project involved inventorying and mapping cultural resources within the park boundary, most particularly Civil War-era sites, thus generating a useful data base for future inquiry. As a result, only broad research questions were addressed concerning the early charcoaling industry on the mountain.

Given the emphasis on recording above-ground features, research necessarily focused on defining spatial and temporal relationships between the hearths. Several basic questions were outlined before and during fieldwork:

1. Is there uniformity in the size and configuration of charcoal hearths? If not, what factors determine variations in size and configuration?

2. Are overt patterns discernable in the spatial distribution of charcoal hearths? If so, are they the result of cultural or topographical factors?

3. How are the charcoal hearths and the network of road traces interrelated?

4. Are temporal differences discernable in the distribution of hearths?

It was anticipated that the questions delineated above could be answered, or at least explored, within the bounds of this project.

Methodology

Mapping the road traces on Maryland Heights involved traversing them with a transit and leveling rod. The traverses began at known points previously established as part of the main baseline that extended through the Civil War fortifications and down the Roads A and U, the two fire roads (see Chapter 5's methodology section for additional discussion). At each transit station a backsight was taken of the previous station to establish angle and elevation of the foresight at the next transit station. By using this method, a compass was not necessary. Whenever possible, the traverses were closed to a known point to verify the accuracy of the fieldwork and adjust any closure error. Each measured point was assigned its own set of grid coordinates.

While conducting the road trace survey, cross-sections were measured at selected points to document road construction techniques. In addition, at each recorded point, the roadbed width was measured and notes taken on surrounding topography and erosion.

A set procedure was used to label each of the road traces. Primary roads, on which traverses began, were given individual letter designations. In turn, each branch off the main road was identified by a number added sequentially to the main road letter designation. For example, the first branch off primary road A was labelled Road A1, the second Road A2, and so forth. In addition, if the secondary road branched to the right (as defined when facing the direction of the traverse), an "R" was added to the designation; likewise an "L" was added if the road branched to the left. Thus, if the first branch off Road A extended to the right, it was labelled Road A1R. If the second branched to the left, it was designated Road A2L.

Road designations were further complicated by traces that extended off the secondary branches from the primary roads. The same procedure as outlined above was followed: the first road to the right off Road A1R was labelled Road A1R1R. If this same road had branched to the left, it was called Road A1R1L.

The labelling system used for the roads does not necessarily rank the roads in terms of importance or width and length. While the general trend is in that direction, some major roads did not receive their own letter designation because they intersected with other primary roads or with secondary roads that were mapped first. Conversely, some isolated, short, narrow roads received single letter designations because they were not located near primary roads.

As most of the hearths lay in proximity to road traces, they were mapped along with the existing road network. Extensive walkovers across areas of the mountain not visible from any roads, however, did reveal several hearths with no apparent associated roadways. Recording these hearths required traversing across slopes to reach them.

The same basic techniques were used to record each hearth. A hearth first was assigned an identification number. The central point on the long axis of the hearth was set by eye and surveyed. The transit then was set up on this point and a measured cross-section through the short axis, or width, taken. In addition, the two end points defining the length of the hearth were measured, thus providing dimensions for both the length and breadth of each charcoal hearth. Such measurements were not possible for all of the hearths, however, as several had experienced severe erosion or had been altered during Civil War-period occupation of Maryland Heights. In conjunction with the measurements recorded for each hearth, information relating to general construction techniques, surrounding topography, degree of erosion, and associated roads was noted.

Based on the comprehensiveness of the fieldwork, it is believed that all existing charcoal hearths within the park boundary have been recorded. Possible exceptions may be some that have eroded to the point where they have become indistinguishable from the surrounding terrain. In addition, it is conceivable that hearths may have been destroyed by later military and agricultural activities.

Charcoal Hearth Descriptions

The archeological research team mapped 57 hearths and approximately 23 miles of road traces. A rough breakdown of hearth distributions reveals that 18 lie on the east face of Maryland Heights and 36 on the west side. Three hearths (CH 37, CH 39 and CH 57) straddle the crest (Figure 3.7). The hearths are scattered along the flanks of the mountain; only one (CH 15) sits on the extreme southern end, which is composed primarily of steep slopes and cliffs.

The charcoal hearths presently are overgrown with ground vegetation and young trees. All have experienced at least some erosion. Stream runoff and post-Antietam Iron Works land usage have caused extensive erosion in some hearths, distorting their original configurations and dimensions.

The same basic construction technique was used for each of the hearths on Maryland Heights. An area first was leveled by digging into the mountain side and throwing the excavated dirt down slope. This procedure eventually created a flat area the required size. The grade of slope on which the hearth was constructed determined the degree of cut and fill necessary to create the artificially level spot.

Although sixty percent of the charcoal hearths are situated in rocky areas, stones on the hearth surfaces had been removed, as few were evident.

Figure 3.7

Large boulders remain scattered around the edges of some of the hearths. In one instance, a hearth (CH 43) had a boulder located near its center, where it certainly would have decreased the size of the charcoal mound considerably.

A distinguishing characteristic of the hearths on Maryland Heights is the rich black soil with small bits of charcoal that composes the ground surface. Of the 57 recorded hearths, only two (CH 6 and CH 40) lack this distinctive sooty black soil. Heavy erosion and/or later alterations may have obscured evidence that Charcoal Hearth 6 was used. The strong brown soil of Charcoal Hearth 40, on the other hand, suggests that this hearth may not have been utilized for charcoal making. Several hearths (CH 4, CH 39, and CH 57) contain soil that is not as dark as that found in the other charcoal hearths. It must be noted, however, that Charcoal Hearth 4 has eroded heavily and that both Charcoal Hearth 39 and Charcoal Hearth 57 are located in areas of heavy military occupation along the crest.

The majority of hearths (82%) are shaped elliptically, with the short axis perpendicular to the slope and the long axis horizontal to it. The base of the cut resembles a flattened semicircle. On the other hand, the top edge of the fill generally forms a less pronounced curve and in most instances is slightly wedge-shaped (Figure 3.8). The cut generally is steeper and more pronounced than the fill, which tends to blend with the natural slope below it (Figure 3.9). The average cut is about four feet deep, whereas the fill averages 5.1 ft in depth.

Hearth lengths range from 23.2 to 50.6 ft, with a mean length of 37.7 ft. Widths range between 13.2 and 36.9 ft, and average 27.7 ft (Table 3.1). The average width to length ratio for all the charcoal hearths is .75--the widths tended to be about three-quarters as long as the lengths.

Six hearths (11%) are classified as round. With the exception of CH39 on the crest, all are scattered along road traces in the northwest corner of Maryland Heights. The fill edge of these hearths does not have the wedge shape characteristic of most of the oblong hearths.

Aspect for each of the charcoal hearths is defined as the direction the hearth faces from the center of the back, or cut section, toward the center of the front, or fill section. Actual measurements are computed using the cross-sections recorded for each hearth. Not surprisingly, those hearths situated on the east flank of the mountain tend to face eastward, although with a large range of variation (52.6° to 177.9°). Overall, aspect on the west slope varies less than on the east slope and ranges from 248.9° to 331.7° (Table 3.1).

Terrain substantially influences the aspect of each hearth. As a rule, the aspect is perpendicular to the slope on which the hearth was constructed. Since the ridge that forms Maryland Heights extends in a northeast-southwest direction, it is not surprising that the general orientation of the hearths on the west side is toward the northwest, and on the east side toward the southeast.

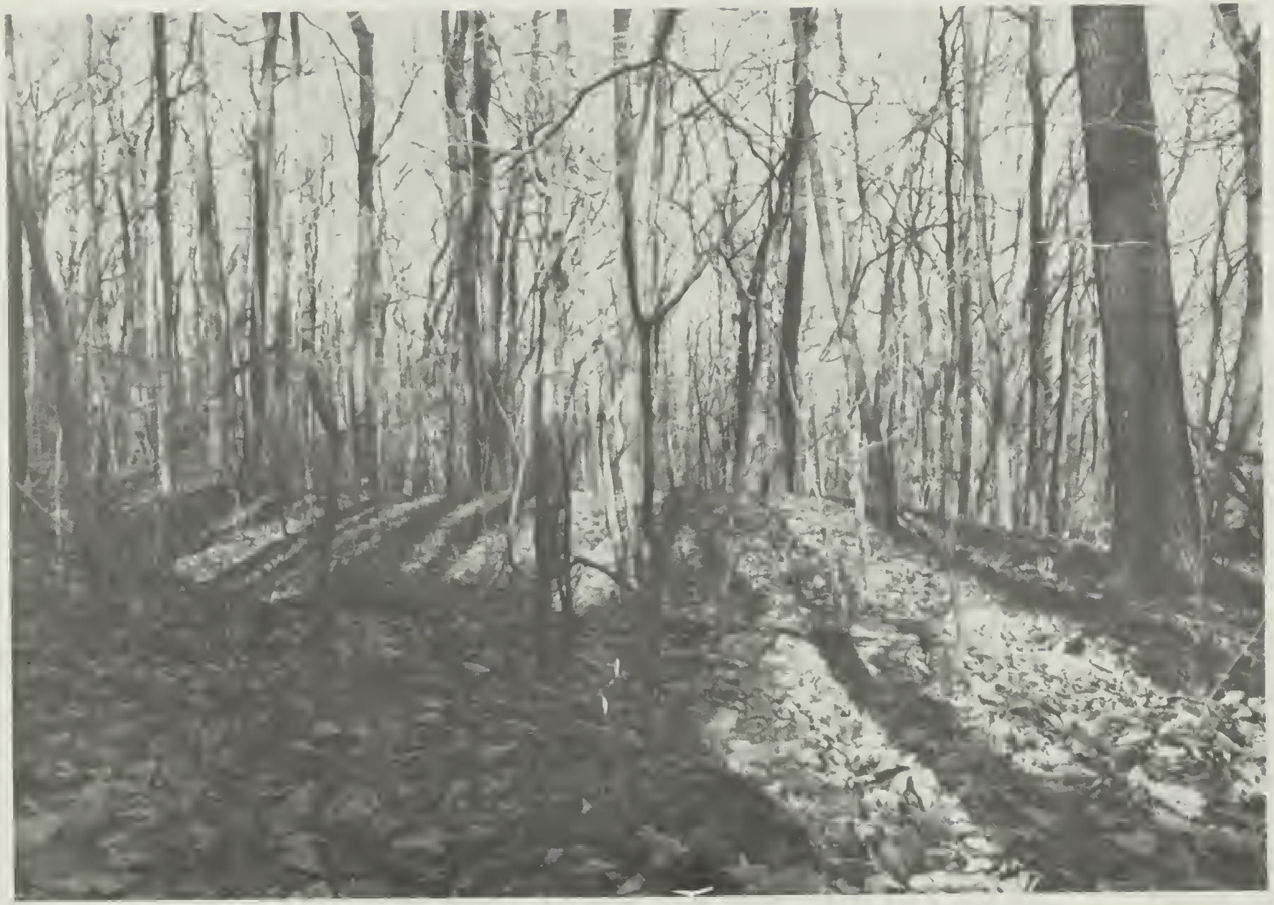
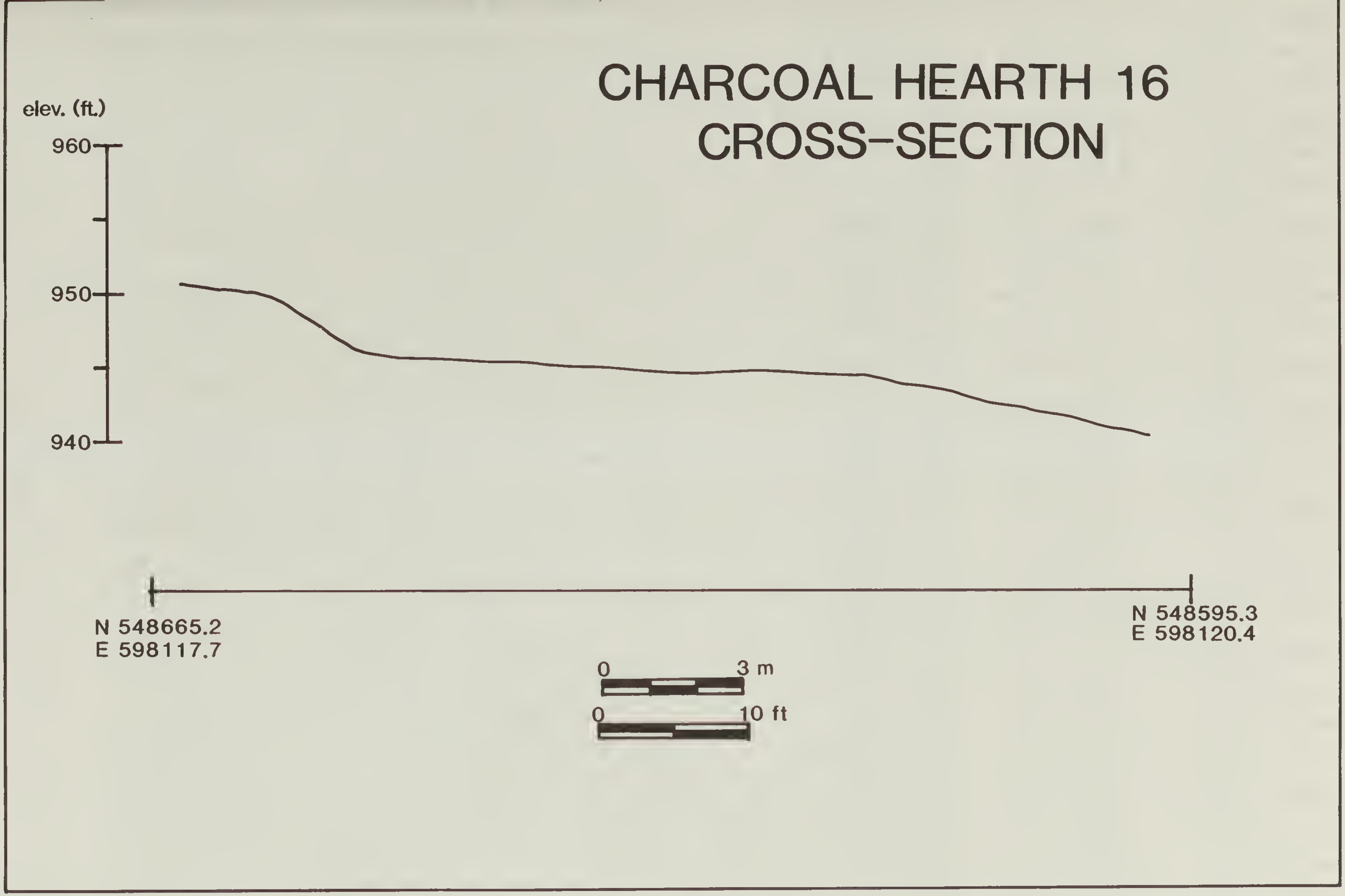


Figure 3.8 Charcoal Hearth 8, Looking east-northeast. In the foreground lies the rounded cut; behind is the wedge-shaped fill side.



CHARCOAL HEARTH 16
CROSS-SECTION

elev. (ft.)
960
950
940
N 548665.2
E 598117.7
N 548595.3
E 598120.4
0
3 m
0
10 ft

Figure 3.9

MARYLAND HEIGHTS RESEARCH TEAM
CHARCOAL HEARTHS
02/02/87

Hth	MARYLAND NORTHING	GRID EASTING	ELEV FEET	LNTH FEET	WIDTH FEET	X-SEC FEET	ASPECT DEGREE	DATE OF NOTES
1	549059.70	597309.50	1272.19	40.50	22.50	40.30	136.57	03/28/86
2	548439.30	597117.10	1191.03	33.90	21.50	46.25	116.74	03/28/86
3	548172.90	597081.00	1183.50	37.70	22.70	56.79	71.62	04/01/86
4	547552.30	597738.80	952.72	43.90	31.80	54.74	128.55	03/28/86
5	547820.60	597827.80	930.85	36.70	26.60	52.00	52.57	03/28/86
6	548238.90	597876.50	886.88	30.70	29.60	52.90	88.66	03/28/86
7	549458.30	597658.70	1279.29	37.80	27.60	42.48	132.52	04/23/86
8	550017.40	597885.70	1290.58	46.10	28.10	47.63	92.89	04/24/86
9	547920.90	596165.40	1276.42	40.30	19.80	43.23	248.91	06/03/86
10	547028.10	595567.00	1152.80	38.70	25.60	49.05	295.37	06/04/86
11	548094.20	598663.50	722.97	39.80	24.00	55.00	116.83	03/19/86
12	549674.30	599373.80	725.02	50.60	35.50	56.30	129.15	03/20/86
13	549435.90	598587.90	940.86	41.30	25.30	51.60	107.53	03/20/86
14	549878.80	598790.90	899.88	41.40	33.10	61.10	97.50	03/20/86
15	544891.30	597626.90	443.50	28.80	23.00	44.50	106.85	03/24/86
16	548630.30	598119.10	945.15	39.90	34.50	46.52	177.86	03/26/86
17	548839.90	597990.20	1000.81	46.90	27.50	51.37	170.27	03/26/86
18	548522.90	597933.60	914.88	39.30	31.00	57.80	160.21	03/26/86
19	547963.20	598272.70	779.99	38.30	27.10	53.29	70.03	03/27/86
20	547503.80	594762.80	803.60	43.90	25.10	51.83	293.18	05/06/86
21	548414.60	595018.60	862.73	38.10	22.10	52.86	281.31	04/10/86
22	549198.60	595267.70	934.15	46.60	34.30	51.16	251.85	04/02/86
23	548802.00	595126.90	894.54	34.90	26.10	50.46	270.32	04/10/86
24	549416.80	595318.90	953.85	37.90	30.20	54.27	256.57	04/14/86
25	547822.40	595575.80	1054.57	41.50	29.70	56.67	280.57	04/07/86
26	548037.00	595006.90	874.97	36.60	27.50	49.81	261.71	04/07/86
27	546985.70	594451.90	773.90	40.90	27.60	53.88	305.66	04/08/86
28	546985.70	594185.20	748.25	36.20	28.90	49.40	308.36	04/09/86

MARYLAND HEIGHTS RESEARCH TEAM
CHARCOAL HEARTHS
02/02/87

Hth	MARYLAND NORTHING	GRID EASTING	ELEV FEET	LNTH FEET	WIDTH FEET	X-SEC FEET	ASPECT DEGREE	DATE OF NOTES
29	547769.20	594352.00	698.37	38.40	16.30	29.60	313.15	04/02/86
30	548693.90	594530.80	726.76	33.90	27.50	53.72	273.31	04/14/86
31	549045.00	594822.20	815.35	42.90	30.80	49.30	260.29	04/14/86
32	550285.00	595998.20	1069.67	40.00	31.50	48.05	286.08	05/08/86
33	550690.70	595631.00	963.66	41.20	36.20	57.93	297.44	05/09/86
34	550519.10	595268.40	930.67	33.40	29.30	56.50	331.74	05/22/86
35	550771.90	594841.60	773.82	28.70	33.30	42.80	319.48	05/22/86
36	550509.30	596177.30	1091.97	33.50	36.70	50.32	289.63	05/08/86
37	549544.80	597141.90	1401.56	34.20	30.50	49.63	158.20	04/23/86
38	550333.80	598007.50	1256.01	37.80	27.00	45.19	94.46	04/24/86
39	550610.80	597282.10	1405.76	23.30	21.90	28.70	88.78	04/24/86
40	547180.10	593649.40	570.72	37.60	24.60	34.50	303.18	04/03/86
41	546379.40	594066.50	760.50	38.20	29.90	51.38	283.13	05/01/86
42	547102.30	595342.90	1038.03	32.80	13.20	44.28	292.41	05/07/86
43	549834.60	595621.40	1014.50	35.40	36.90	55.10	293.93	05/08/86
44	550899.60	595806.80	985.67	34.30	33.40	52.83	305.81	05/12/86
45	550914.40	596238.30	1135.97	32.30	18.90	45.57	259.34	05/12/86
46	551165.30	596236.40	1148.18	38.60	27.10	51.29	268.45	05/12/86
47	551175.30	595407.80	825.64	28.70	31.70	45.95	317.89	05/13/86
48	551490.60	595270.90	772.94	26.80	24.90	38.30	312.78	05/15/86
49	550505.80	594279.60	699.97	34.70	32.50	55.50	304.49	05/23/86
50	550566.80	593896.80	1343.84	43.60	31.40	50.10	304.97	05/29/86
51	549991.10	596650.40	1330.77	32.70	32.10	46.10	301.49	05/29/86
52	549650.90	596571.40	1333.83	33.60	22.80	43.90	307.21	05/30/86
53	548228.90	596005.70	1247.95	42.70	22.30	58.21	275.91	06/02/86
54	549118.80	596018.20	1202.26	33.90	23.20	53.31	275.87	06/02/86
55	549535.10	596210.80	1229.97	36.80	14.50	44.31	285.06	06/03/86
56	547584.50	595995.90	1228.46	47.40	26.90	43.00	306.52	06/03/86

Table 3.1

All but three of the hearths have at least one entrance that provides access into the center. These entrances without exception are found at the ends of the long axes and separate the cut side of the hearth from the fill half. Two-thirds (38) of the hearths have definable entrances at both ends.

The entrances vary from five to eight feet in width, but the vast majority measure five feet across. A surprising number (39%) of the charcoal hearths have no visible road traces extending from their entrance(s). Of these hearths, however, most are located immediately adjacent to a primary road, and it is likely that short ramps connected the hearths to these roads.

About one-third of the hearths have narrow, meandering road traces extending up slope from their entrance(s). These secondary roads average four to five feet in width and involve minimal construction. In rocky areas, the stones simply are moved to the sides of the passage. Many of these narrow roads climb steeply, with maximum grades ranging from 10 to 50%. After a short distance they generally fade out.

All but four hearths lie in proximity to primary road traces. Of the exceptions, three (CH 50, CH 51, and CH 52) form a line along a narrow plateau a short distance below the crest on the west slope of the mountain (Figure 3.7). The fourth (CH 43) lies behind the Spur Battery, a major fortification on the west side of Maryland Heights. Significantly, these hearths are located within areas of primary activity during the Civil War, which may account for the obliteration of the road or roads leading to them.

The primary roads differ in several respects from the narrow, meandering roads extending from the charcoal hearths. They tend to be better constructed, some with cut-and-fill and others with stone retaining walls. In addition, these roads are wider, averaging five to eight feet in width, and could have supported wagon traffic. While the narrow roads generally fade out after extending only a short distance, the primary road traces either travel to the base of Maryland Heights, where they once joined roads still in use today, or extended north along the crest toward Solomon's Gap or other roads that eventually turned down slope. Little difference exists, however, between the maximum grades of the primary road traces and the narrower, secondary roads; both are steep.

In only four instances does a major road trace run through the center of a hearth (CH 48, CH 49, CH 56, and CH 57). It is much more common to find one entrance of the hearth opening directly on to a primary road, perhaps with a short ramp leading to that road. The second entrance generally opens on to one of the narrow, secondary road traces that proceeded uphill or across slope (never downhill). Interestingly, only one hearth (CH 2) has a secondary road extending from each exit.

Hearths perch above primary roads that extend across slope and beside those that run up-and-down the slope. Only three hearths (CH 38, CH 53 and CH 54) provide exceptions to this rule. Even so, both Charcoal Hearth 38 and Charcoal Hearth 53 have short roads leading to the main road from each entrance, and Charcoal Hearth 54 has a single, short access road.

The hearths on Maryland Heights are situated on varied terrains. Almost half lie along the edges of the narrow terraces that extend along the flanks of the mountain. About 35% lie on relatively uniform slopes that range from gradual inclines to very steep grades. The remainder sit at or near the base of steep slopes, at the beginning of terraces or around the edges of ravines.

The slopes on which the charcoal hearths are constructed vary greatly in steepness. Grades range from a minimal 1% (CH 39) to a remarkable 49% (CH 42). Hearths on the east side of the mountain cluster in three distinct elevation ranges arranged along linear tiers. These tiers follow the edges of narrow shelves or other breaks in the slope and extend in a general northeast-southwest direction. The hearths on the west side do not cluster conveniently by elevation, although they also tend to follow a linear, tiered pattern with ascending elevations toward the north.

Almost all of the hearths lie in exposed positions with little protection from the elements, in contrast to historical documents which stress the need for a sheltered position. Hearths located within narrow ravines (such as CH 15 and CH 40), or flanked by large rock outcroppings, provide the only exceptions.

About one-eighth of the charcoal hearths sit next to intermittent or flowing streams. Many other hearths, especially those along the lower slopes on the west side and near the bottom of Road H on the east side, have ready access to nearby water sources. Those hearths on the crest and along the upper tiers of both flanks of the mountain, however, have no apparent nearby water sources.

During the Civil War, several hearths were incorporated into what appear to be small defensive positions. A stone breastwork was constructed around the base of Charcoal Hearth 8, located on the edge of a plateau below Campground Area 5 on the east side of Maryland Heights (Figure 6.26). This hearth held a commanding view of Pleasant Valley, as the mountain dropped precipitously below it. There were no surface indications of any features.

Just below the crest, at the top of the ravine through which Road H6L passes, a stone breastwork was constructed in front of Charcoal Hearth 37. Campground Area 4 bounded the north and west side of this hearth (Figure 6.24). This hearth also had a commanding position over a strategically important access point to the top of Maryland Heights. Two small features were apparent in Charcoal Hearth 37. The first, a shallow, stone-filled depression about seven feet square, was located near the south central edge of the hearth. Another shallow depression sat on the east edge of the hearth, adjacent to Road H6L.

The only hearth that appeared to have been physically altered during the Civil War was Charcoal Hearth 34, located in the northwest corner of Maryland Heights a short distance north of the Spur Battery. This hearth lay at the edge of a broad plateau. A semicircular ditch about 1.5 feet in depth was excavated around the fill side of the hearth, creating a small earthen breastwork between the ditch and the edge of the fill. The hearth also anchored the west end of a stone breastwork (Figure 6.35) that cut across the plateau and was associated with the Barnard Line.

INTERPRETATION OF THE CHARCOAL INDUSTRY ON MARYLAND HEIGHTS

In this section, the data recorded for the charcoal hearths and road traces on Maryland Heights are interpreted and compared with historical documentation and technological information from other sources. Discussion initially focuses on the individual charcoal hearths, with an emphasis on patterning in their size and configuration. Secondly, the spatial distribution of the hearths and their relationship to the network of road traces is addressed. Lastly, the development of the charcoaling system on Maryland Heights and its relationship to Keep Triste Furnace and the Antietam Iron Works is studied.

Almost all of the charcoal hearths on Maryland Heights are oblong in shape, with average dimensions of 37.7 x 27.7 ft. While size varies greatly from hearth to hearth, the width tends to be about three-quarters as long as the length. Variations to this norm range from basically round hearths such as Charcoal Hearth 44 (34.3 x 33.4 ft) to the incredibly long and narrow Charcoal Hearth 55 (36.8 x 14.5 ft).

The charcoal hearths recorded on Maryland Heights do not differ greatly in size and configuration from those that have been recorded in other areas. The hearths at Hopewell Furnace in Pennsylvania are described as round in shape, with diameters that range from 30 to 40 feet. In contrast to those at Hopewell, hearths noted during an archeological survey at Catoctin Furnace in Maryland are oblong, with one measuring 44 x 32 ft.[84]

On Maryland Heights, slope provides the primary determinant of charcoal hearth size and shape. The steeper the terrain, the narrower the hearths become, while on flat areas they tend to be more circular in configuration. Taking the two hearths given above as examples, this quickly becomes apparent. The long and narrow Charcoal Hearth 55 lies on a slope with an approximate 35-40% grade, while the round Charcoal Hearth 51 sits on the edge of a gradual slope.

According to historical sources, construction of hearths on steep slopes was considered undesirable.[85] To build a hearth such as Charcoal Hearth 55 certainly entailed more work than one laid out in a flatter area, as a large amount of dirt had to be excavated in order to form a level surface. Most likely, hearths were constructed on the steep slopes simply because there was no other way to gain access to surrounding wood supplies. In sum, it probably was more efficient to build remote hearths on steep grades than to transport the wood long distances to flatter and more accessible areas.

Jackson Kemper, in his study of the charcoal-making industry at Hopewell Furnace, noted that a road wide enough for a sled to traverse passed through the center of each charcoal hearth. The wood hauler drove his sled into the hearth from one side, unloaded the wood around the edges of the hearth, and then journeyed out the other end. In addition, the wood always was transported downhill, with the hearth located at the bottom of the slope or rise.[86]

About three-fourths of the hearths on Maryland Heights have two entrances, one on each end of the long axis. Only three contain no apparent entrances. Of those that presently have only one entrance, several are eroded heavily, and others were converted into defensive positions during the Civil War, obscuring their original configurations. Most of the entrances, whether double or single, are five feet wide.

Although most of the charcoal hearths had two entrances, more than one-third (39%) of the total number of hearths had no visible road traces extending from them. Thus wood procurement for the charcoaling system on Maryland Heights apparently differed from that described by Kemper and others. In fact, only one hearth (CH 2) had two entrances with a narrow, secondary sled road extending uphill from each. Instead, one end of the hearth generally opened onto a primary road, which probably provided an access point for both sleds and wagons. If the hearth had a second entrance on the other end, a narrow, secondary sled road often extended uphill from it.

Based on the above discussion, it is postulated that the primary, or wagon, roads served in many instances as one leg of the wood procurement system. Where in existence, the loaded sled may have traveled narrow, ill-constructed secondary roads down to the hearth, and then continued out on to the wagon roads to begin their return journey to the wood lot. This system most likely was circular in operation, as the sled roads were too narrow to support two-way traffic, and in some instances may have been too steep to ascend even with an empty sled. In addition, a number of narrow skid roads (Roads C1R and H8R, for example) branch directly from primary wagon roads and are not associated with individual hearths. This suggests that wood was not always procured immediately adjacent to the hearth, but in some instances was brought down wagon roads as well as sled roads.

As noted above, Kemper states in his study of Hopewell Furnace that hearths are located at the bottom of slopes to facilitate transport of the wood to the hearth. This holds true on Maryland Heights as well. A large number of the hearths sit along the edges of narrow, linear terraces, while others lie at the base of slopes. These locations insured that the wood could be hauled downhill or across slope to the hearths, minimizing effort and increasing efficiency.

It is hypothesized that charcoal hearths would have been spaced regularly across the landscape to take maximum advantage of forest resources and to minimize the distance travelled from felling point to hearth. In reality, placement of the hearths on Maryland Heights is constrained imposed by the steep and rough terrain that characterizes most of the mountain. When viewed separately from the road system, it becomes apparent that the hearths follow a linear, tiered pattern on both faces of Maryland Heights dictated by narrow plateaus or shelves that extend in a general northeast-southwest direction along the mountain. Even so, the hearths are spaced fairly regularly along these tiers, with little apparent clustering except for Charcoal Hearths 16, 17, and 18 on the east flank.

Charcoal hearths are not found in all areas of Maryland Heights. With the exception of Charcoal Hearth 15, they are notably absent along the south end of the mountain above Sandy Hook and the Potomac River. Although the steep cliffs overlooking Harpers Ferry explain some of this absence, other areas, such as the slopes and plateaus above Sandy Hook, could have supported charcoal hearths. It is quite possible that later domestic settlement along the east base of the mountain and on the Kilham tract in the southwest corner of Maryland Heights may have obliterated hearths once situated in these areas.

With few exceptions, hearths are located along primary roads that could have supported wagon traffic. Almost all are perched above the roads or sit beside them, allowing easier transfer of the charcoal from the hearth to the wagon. Once loaded, the charcoal wagons travelled down slope, as they would have been too heavy to traverse uphill along the steep grades that characterize most of the roads on Maryland Heights.

Interestingly, while the hearths extend in linear tiers along the flanks of Maryland Heights, the primary wagon roads tend to run the opposite way, or up-and-down slope. Due to later changes in the road system by military occupation and domestic settlement, this patterning has been obscured somewhat, especially on the west side of the mountain due to improvements to Roads J and U. It is apparent, however, that hearths located along the same narrow terrace were not usually connected with one another by road. Exceptions to this general rule are hearths located along Roads H and LL, as these two roads extend across slope for at least part of their respective courses.

The charcoal manufactured on Maryland Heights was funnelled off the mountain at several key points. On the east side, Road H provided the main route for the northeast quadrant. This road emptied on to Road A, part of which follows the course of the Thirty-Foot Reserve Road that extended (on paper at least) the length of the east flank of Elk Ridge (Roads B and C are historical traces of this road as well). The Reserve Road extended south to Sandy Hook and north toward Solomon's Gap, a distance of approximately six miles. The loaded charcoal wagons most likely travelled around the southern end of Maryland Heights and followed basically the same route as the present-day Harpers Ferry Road to the Iron Works.

On the west side, several roads extended to the base of the Heights. Two of these, Roads L and V, converged near the base of the mountain behind the historical Unseld Farm. They probably continued to present-day Hoffmaster Road, an early road most likely constructed by the Antietam Iron Works. In the northwest quadrant of the park property, additional roads also converged on Hoffmaster Road. Along the south end of the mountain, major road traces (Roads N, P, and U) empty on to Harpers Ferry Road.

No direct documentation exists of the individuals who charcoaled Maryland Heights. McPherson and Brien, and later John McPherson Brien, owned a large number of slaves. Slaves commonly were employed as colliers at furnaces and forges throughout the Mid-Atlantic and the South, so it is possible that they were employed as such at the Antietam Iron Works.[87] Ironmasters also contracted charcoal production to outside individuals who worked on either their own or furnace lands. The United State Armory at Harpers Ferry contracted out charcoal making on Loudoun Heights, a tract located on the south side of the Shenandoah River.[88]

Little historical documentation of the development of the charcoaling industry on Maryland Heights remains. Charcoaling on the mountain could have begun as early as 1764, when John Semple patented Keep Triste on the north bank of the Potomac River.[89] This early date is unlikely, however, as Semple owned other lands that were closer and more accessible to Keep Triste Furnace. Around 1800, the United States Armory at Harpers Ferry acquired charcoal from Samples Manor in Maryland, but it is not known whether they exploited the slopes of Maryland Heights.[90]

It is probable that the acquisition of Maryland Heights in 1810 by John McPherson and John Brien, owners of the Antietam Iron Works, marks the beginning of extensive charcoaling on that section of Elk Ridge.[91] According to claims filed after the Civil War for damages incurred during Federal occupation of the mountain, charcoal-making continued on Maryland Heights until circa 1840. These claims give an impression of when certain areas were last cut. The southwest corner of the tract, centered on Lot 146, was charcoaled about 1835 or 1838.[92] The east flank of the mountain apparently was cut earlier, as several references are made to the fact that "the timber on the west side of the Heights is much inferior to that on the east side."[93] Given a 20- to 25-year regeneration period, it is quite possible that the west side of the mountain was cut twice by the Iron Works, and the east side once.

Clues in the temporal development of the charcoaling industry on Maryland Heights also are found within its system of road traces. The physical evidence suggests that contemporary charcoaling roads very rarely, if ever, crossed one another. Whenever two roads do intersect within the survey area, one has been constructed over top of the other. By studying the overlapping charcoal roads, some tentative conclusions about the evolution of the charcoal-making system can be reached.

First, it appears that the charcoaling roads, both sled and wagon, were constructed with a branching, dendritic pattern. This is especially apparent near the base of both sides of the mountain. These roads in turn are overlapped by several major, and later, roads, including Road H on the east flank of the mountain and Roads J and U on the west side. Second, the fact that the earlier roads lie near the base of the mountain, as suggested by the pattern of overlapping road, indicates that charcoaling on Maryland Heights began along the more accessible base and moved uphill toward increasingly less accessible areas as demand dictated. It may have been at this time that major connector roads such as Road H and "horizontal" roads such as Road LL and their attendant hearths were constructed.

SUMMARY AND CONCLUSION

A total of 57 charcoal hearths have been mapped as part of the Maryland Heights research project. While no two hearths are exactly alike, their similarities outweigh their differences. Most are elliptical in shape and cut into the hillside to form a level surface. Entrances into the hearths invariably are located at the ends, between the cut side and the fill side. Thus the charcoal hearths appear to be constructed within a preconceived conceptual framework. In turn, these culturally-imposed ideas are modified by the environmental realities of the mountain, creating the basically superficial differences that exist between the hearths in size and configuration.

Hearth placement follows a linear, tiered pattern on both faces of Maryland Heights. This pattern is dictated by the narrow plateaus or shelves that extend along the mountain in a general northeast-southwest direction. The hearths sit along the edges of these plateaus and are separated from those above and below by steep slopes, and in some instances cliffs. Although at first glance it appears that the placement of charcoal hearths is dictated by topography, the tendency toward regular spacing of hearths along these tiers points to cultural decision-making in their placement as well. Secondary sources suggest that wood lots were located behind and up slope from the hearths. Regular spacing thus permitted maximum exploitation of timberland while also keeping the transportation distance of the wood from the ranks to the hearth at a minimum.

Approximately 23 miles of road traces have been recorded on Maryland Heights. Most of the roads are associated with the charcoal industry and can be grouped into two categories. The first are narrow, poorly-constructed sled roads that led from the wood lots to the hearths. These secondary roads average four to five feet in width and generally are very steep, with maximum grades ranging from 10 to 50%. The sled roads extend uphill either from the hearth entrances or branch off primary wagon roads.

The primary roads tend to be better constructed than the sled roads. They are wider, ranging from five to eight feet in width, and could have supported wagon traffic. While sled roads generally fade out after extending only a short distance, the primary roads either continue to the base of Maryland Heights and join other roads, or extend north along the crest toward Solomon's Gap or other primary roads that eventually turn down slope.

Almost without exception, the charcoal hearths on Maryland Heights are located along primary road traces. Most significantly, while the hearths are aligned along linear tiers, the wagon roads generally run up-and-down slope. It is apparent that hearths located on the same narrow terraces usually were not connected with one another by primary roads. The configuration of the road system suggests instead that the movement of loaded charcoal wagons (and wood sleds as well) always was down slope, which makes sense on the steep terrain of Maryland Heights.

Extensive charcoaling on Maryland Heights most likely began with its acquisition in 1810 by John McPherson and John Brien, owners of the Antietam Iron Works. The physical evidence suggests that charcoaling began along the more accessible base of the mountain and moved uphill toward increasingly less accessible areas. Charcoaling continued on Maryland Heights until circa 1840, at which time the Iron Works began using anthracite coal in addition to charcoal.

The question arises as to whether the charcoaling industry recorded on Maryland Heights is reflective of the Antietam Iron Works holdings as a whole, or of other ironworking establishments as well. Caution is in order before making broad generalizations. First, the south end of Elk Ridge contains some of the roughest terrain found within the land holdings of the Iron Works, and thus may not be representative of other areas with fewer topographic restrictions. In addition, Maryland Heights is one of the more distant tracts from the Iron Works--approximately seven miles. As a result, it may have been exploited to a lesser degree than other, closer areas. Finally, later Civil War and domestic activities obscure the exact definition of the charcoaling system on Maryland Heights. Needed are comparative studies from other ironworking establishments, and from additional areas of the Antietam Iron Works holdings, before a clear picture of an overall pattern will emerge.

The effect of the Antietam Iron Works on the cultural landscape remains apparent even today. As discussed previously, bankruptcy proceedings forced the public sale of the Iron Works and its attached land, which was divided into about 250 lots, which in turn were sold individually. As a whole, these lands are mountainous and contain poorer soils than those found in Pleasant Valley to the east and the Antietam Valley to the north and west. Consequently, the relatively inexpensive lots attracted individuals of limited means who developed small farms and orchards on these marginal lands. The log houses they constructed still contrast with the brick and stone houses located on the more productive valley lands. In addition, several roads constructed by the Iron Works to transport charcoal still remain in use today as secondary county roads.

The Maryland Heights project provides the first comprehensive survey and analysis of the physical remains of a very important industry. It must be emphasized that charcoal manufacturing occupied a critical role in the operation of all antebellum charcoal furnaces and forges. Today, a person walking through the mountains of the eastern half of the United States will often encounter the weathered, overgrown ruins of charcoal hearths and the eroded road traces that pass by them. Additional, comparative studies from other ironworking establishments would lead to an even better understanding of the role of the iron-making industry in the exploitation and development of marginal, mountainous areas.

CHAPTER IV
CIVIL WAR HISTORY OF MARYLAND HEIGHTS
AN OVERVIEW

This overview presents a chronological synopsis of the major occupations and campaigns which occurred on or around Maryland Heights during the war. The Official Records provide the primary source of information for this section, especially since the reports and correspondence of Union and Confederate authorities present fascinating insights into the evolution and use of Maryland Heights as a strategic point on the border between the embattled North and South.

Confederate Occupation in 1861

Six days after assuming command of the Southern garrison posted at Harpers Ferry, Colonel Thomas J. Jackson provided a status report: "I have occupied the Virginia and Maryland Heights," Jackson informed Maj. Gen. Robert E. Lee, commander of all forces in Virginia. "Whenever the emergency calls for it, I shall construct [fortifications] on the Maryland Heights."[1]

One day later, on May 7, 1861, Jackson supplied Lee with an update: "I have finished reconnoitering the Maryland Heights, and have determined to fortify them at once, and hold them . . . be the cost what it may."[2]

The occupation of Maryland Heights--highest of three mountains overlooking Harpers Ferry--certainly made good strategic sense to Thomas Jackson. As a West Point graduate and former professor at the Virginia Military Institute, Jackson reasoned that Harpers Ferry could be defended only by holding the highest ground.

Yet the high ground which constituted Maryland Heights presented a serious problem--the problem of politics. The dominating bluffs just north of the Potomac fell upon Maryland soil; and unlike Virginia, the Old Line State had not yet seceded from the Union. Occupation of Maryland Heights, by some interpretations, therefore represented an invasion of Maryland's territory. Such offensive action, some believed, would alienate the people of Maryland, and neither Virginia nor the fledgling Confederacy could afford to lose this important border state.

Jackson was not insensible to the politics of Maryland Heights. In his May 6 letter to General Lee, in which he first expressed his desire to occupy the mountain, Jackson wrote: "Thus far I have been deterred . . . by a desire to avoid giving offense to [Maryland]."[3]

But Jackson was a military pragmatist, not a politician; and when he informed Lee on May 7 that he intended to fortify Maryland Heights "be the cost what it may," Jackson's cost referred not to labor or casualties, but to the cost of political repercussions.

"I am of the opinion," Jackson proffered in a May 7 letter to Lee, "that [Harpers Ferry] should be defended with the spirit which actuated the defenders of Thermopylae, and, if left to myself, such is my determination."[4]

Leaving the "determination" of Maryland Heights in Jackson's hands solicited a rapid response from General Lee. "In your preparation for the defense of your position," Lee warned Jackson on May 9, "it is considered advisable not to intrude upon the soil of Maryland, unless compelled by the necessities of war."[5]

Lee's May 9 instructions arrived too late, however; for on the same day, Jackson proudly announced that he had occupied Maryland Heights with about 500 Kentuckians and Virginians.[6]

"I fear you may have been premature in occupying the heights of Maryland," an alarmed Lee wrote Jackson on May 10. Another forceful message on the same day reinforced the commanding general's concern: "[W]e have no right to intrude on [Maryland] soil, unless, under pressing necessity, for defense."[7]

Jackson apparently considered the necessity "pressing," for although Lee suggested all troops be withdrawn from Maryland Heights, Jackson kept them in place. In addition, Lee's admonishments apparently stung Jackson; for in the 13 days following Lee's May 10 letters, Jackson filed only one report to the commanding general, and it noticeably neglected any mention of Maryland Heights.[8]

Lee's chagrin over Jackson's aggressiveness, coupled with the general's belief that Jackson's occupation of Maryland Heights might "interrupt our friendly arrangements" with Maryland, presented a very legitimate concern to Southern authorities. For example, at the end of April, 1861, Marylanders residing near Harpers Ferry complained that Virginia soldiers had forcibly entered private houses, seized personal property, and insulted and threatened "unoffending citizens." These reports prompted a protest from Maryland Governor Thomas H. Hicks: "I am confident these outrages have been committed without orders from you," Hicks wrote Virginia Governor John Letcher on May 1, 1861. "But your Excellency will readily perceive that they are liable to provoke hostilities between your people and those who suffer from such unlawful acts." Letcher responded immediately, assuring Governor Hicks that Virginia desired "to cultivate amicable relations" with Maryland. Letcher further guaranteed that Colonel Jackson would "restrain those under his command from all acts of violence and lawlessness."[9]

Six days after Letcher's May 3 response to the Maryland governor, Jackson unilaterly ordered troops to Maryland Heights. This prompted an angry letter to Governor Hicks from Dr. Augustus A. Biggs, a Maryland Heights property owner. Biggs alleged the Southerners had destroyed "a large quantity of timber by fire," and he demanded that Maryland seek protection against losses incurred by the "invasion of our State."[10]

The angry protest of Biggs, in conjunction with solicitations from other disgruntled Marylanders, prompted the Maryland Committee on Federal Relations to appoint a special "Commissioner to Virginia" to investigate these allegations.

On June 6, 1861, this commissioner--Mr. Outerbridge Horsey, a delegate from Frederick County--filed his report. Concerning Maryland Heights and the forest fires alleged by Dr. Biggs, Horsey visited the site and discovered the top of the mountain occupied by 400-500 Virginia troops. According to Horsey, the Virginians had "cut down four or five acres of the small and indifferent timber" on the summit, apparently for the purpose of "constructing huts for their temporary shelter." Regarding the fires, Horsey noted approximately four or five acres "had been burnt over by accidental contact of the dried leaves with the camp fires."[11]

The incessant rumblings of the Marylanders prompted Governor Letcher to promise full and liberal compensation for any property damage caused by Virginia troops. Letcher also justified occupation only "in defence [sic] and protection of [Virginia] soil from threatened or actual invasion."[12]

As Governor Letcher worked to assuage the protests of Maryland, another influential Virginian--former United States Senator James M. Mason--exhorted the occupation of Maryland Heights. In a May 15, 1861, letter to General Lee, Mason strongly asserted Virginia's right "to fortify and hold those heights, whether Maryland protest or no." As Mason concluded:

> [Maryland] remains one of the United States, a power now foreign to Virginia, and in open and avowed hostility to us. Occupying her territory, therefore, is only occupying territory of the enemy; nor is it invasion in the proper sense of that term, because the occupation is defensive and precautionary only, and not for aggression, and will cease as soon as the enemy withdraw from Maryland.[13]

As the legal and ethical debate raged over the occupation of Maryland Heights, Jackson kept his soldiers on the heights and began the work of fortification. Company A of the Second Virginia Infantry and the Kentucky battalion of Lt. Col. Blanton Duncan initially occupied the mountain's crest; and according to one Second Virginia account, the soldiers lived under the most primitive wilderness conditions "without tents or cooking utensils" for more than a week. Lack of water on the heights compelled the Virginians to carry their buckets up steep mountain slopes; and without utensils, the men cooked their meat on the rocks and baked their dough by "wrapping it around the ramrods of the guns and holding it over the fires."[14]

Primitive huts constructed of small chestnut trees soon spread along the crest; a steep and rocky road soon climbed the eastern slope; and according to the Richmond Dispatch, a Virginia infantry company from Montgomery County erected a 200-ft. long wooden stockade.[15]

Slave labor apparently performed some of the mountain work, for a May 15 newspaper account in the Alexandria Gazette reported 40 to 50 Negroes crossing the Potomac River "with axes and picks." One day later, the Gazette confirmed the use of slaves when it stated the "laboring force of negroes upon the Maryland Heights is daily increasing." As the Gazette sarcastically concluded, "Colonel Jackson seems to think that the pick and the shovel are great weapons of warfare."[16]

The work on Maryland Heights did not remain unnoticed by the Federals. On June 4, 1861, Major Fitz John Porter reported to authorities in Washington that "at night the sound of the hammer is heard breaking stone on the Maryland Heights, the ax felling trees. Evidently a blockhouse is going up. No one can get near enough to see."[17]

Although the precise location of the Southern fortifications upon Maryland Heights remains undetermined, Confederate Inspector General George Deas confirmed construction of redoubts on the mountain in his May 21, 1861, inspection report. Deas did not visit Maryland Heights himself, but "from frequent conversations" with Lt. Col. Duncan of the Kentucky battalion, Deas became convinced that "little more is necessary to render [the crest] quite secure." In fact, Jackson's overall preparations at Harpers Ferry so impressed Deas that he concluded "there is enough force here to hold this place against any attack."[18]

A soldier reporting for the Rockingham [Virginia] Register concurred with Deas' assessment: "Our heights are being fortified perfectly," the observer wrote, "and in a few days Harper's Ferry will be a point which all creation cannot take--not only impossible but impregnable. Let Abraham make the most of that."[19]

But the Federals received no opportunity to test Jackson's "impregnable" fort. On May 24, 1861, Brig. Gen. Joseph E. Johnston assumed command at Harpers Ferry, and following a "complete reconnaissance of the place and its environs," Johnston reached this conclusion: "Considered as a position, I regard Harper's Ferry as untenable."[20]

Convinced that Harpers Ferry could not be held, Johnston ordered the evacuation of the town and the abandonment of Maryland Heights on June 14, 1861. Before withdrawing west and south toward Winchester, the Confederates burned the United States musket factory and blew up the Baltimore & Ohio Railroad bridge. In less than 24 hours, Harpers Ferry had become "a ghost of its former life."[21]

First Federal Occupation, Summer-Fall, 1861

Less than 24 hours after the Confederate evacuation of Harpers Ferry, Maj. Gen. Robert Patterson, commander of the Union force opposing Johnston's Confederates, advanced from southern Pennsylvania to Hagerstown, Maryland.[22]

With Harpers Ferry now abandoned, Patterson recommended that his army utilize the post as a headquarters, depot, and base of operations. Patterson further proposed as a "military necessity" the reconstruction of the B & O Railroad bridge at Harpers Ferry. According to the general, this would reopen the east-west line of communication, protect channels of trade, and remedy transportation and supply problems for his army. As Patterson concluded, "[u]ntil Harper's Ferry is occupied and fortified I should fear the return of the rebels."[23]

To protect the rebuilt railroad bridge and his proposed base at Harpers Ferry, Patterson recommended fortifying the heights in the "vicinity" of the town. Specifically, with Maryland Heights occupied first, he would protect the B & O's bridge-builders. But on June 19, 1861, Patterson reported the railroad company balking at his plan, refusing to rebuild the bridge until the entire line west to Cumberland received adequate protection. Because of this lack of cooperation, a disappointed Patterson grumbled on the 19th that he would not occupy Maryland Heights, but direct attention instead on General Johnston and the Shenandoah Valley via Williamsport, Maryland.[24]

Although the B & O foiled Patterson's plan, Lt. Gen. Winfield Scott, Commander-in-Chief of the U.S. Army, saw merit in the Federal occupation of Maryland Heights. Scott instructed Patterson on June 20, 1861, to examine the heights "with a view to a battery sufficient to hold the same." This prompted an inspection of the mountain by Captain John Newton, chief of engineers for Patterson's army; and on June 25, Newton filed his report.[25]

Newton ascended Elk Ridge via a "country road" leading up the west slope of Solomon's Gap. He then proceeded south along the summit for approximately four miles, finishing his inspection at the southern extremity of the ridge (Maryland Heights). The engineer described the crest covered with "a small growth of timber and brushwood, and . . . difficult of penetration."

Regarding defense, Newton recommended that the heights be occupied from the southern end of the ridge one and three-quarter miles northward. The principal defense would be felled trees on the slopes of the mountain and across the width (200 yards) of the summit. Behind this timber obstruction on the crest, Newton suggested construction of "a light parapet" with the interior slope "stockaded" for the use and protection of infantry. Newton estimated 2,000 men necessary to occupy the mountain, and he judged preparations for defense would require 2,000 men working for at least ten days.

Most of Newton's report focused, however, not on defense, but the problems of occupying Maryland Heights. For example, the road down the crest required "extensive repairs"; and the Confederate road (constructed in May) up the eastern slope from Sandy Hook was not too steep, but was "very rough, having large stones five or six feet long in may places directly in the road."

Water, or specifically the lack of water, became Newton's primary concern. The engineer discovered no wet springs on the mountain, forcing him to recommend protection of water supplies at the heights' eastern base through occupation of Pleasant Valley.

In sum, Newton reported the mountain "affords capabilities for a strong defense, but from the extent of ground to be occupied, the condition of the roads, and the necessity of hauling water and stores up the mountain, much inconvenience may be experienced."[26]

Newton's bleak assessment of Maryland Heights compelled Patterson to inform General Scott of the difficulties of holding the mountain: "I am convinced," Patterson wrote on June 29, "the occupation of the heights would be attended with great labor, and unless a strong force be placed in Pleasant Valley to keep open communications with water, it cannot be held at this season by any command opposed."[27] Subsequently, the Federals did not occupy Maryland Heights in force in the summer of 1861.

During most of July, Maryland Heights received little attention from Union authorities. With the exception of several brief visits by individual companies of the 9th New York Volunteer Infantry, no Federal troops occupied the mountain.

Then on July 23, 1861, Maj. Gen. Nathaniel P. Banks, who had replaced Gen. Patterson as commander of Union forces in the Department of the Shenandoah, received this message from Winfield Scott: "I deem it useful, perhaps highly important, to hold Harper's Ferry."[28]

To best fulfill these instructions, Banks occupied Maryland Heights on July 29 with Battery A, 1st Regiment Rhode Island Light Artillery; and seven companies of the 2nd Massachusetts Volunteer Infantry. These forces joined the 3rd Wisconsin Infantry, which had encamped on the southwest slope of the mountain on July 21 in a "sloping, stony field" some 300 ft above the Potomac. As Banks reported to Scott on the 29th: "[W]e planted batteries on the Plateau opposite [Harpers Ferry], and another on the summit of the Maryland Heights. . . . These will make the town of Harper's Ferry and the Loudoun Heights . . . absolutely untenable to the enemy."[29]

The Wisconsin boys named their bivouac "Camp Pickney," and it soon became known by the raw recruits for its camp sickness. "The change of climate, the water, the heat of the day, and the sleeping on the ground at night," wrote the regimental historian, "brought on that worst foe with which the soldiers had to contend, the camp diarrhoea."[30] On the other hand, Lt. Charles F. Morse of the 2nd Massachusetts wrote home about his pleasant experiences on Maryland Heights:

> [W]e spotted a very neat little log farm house quite near our camp [and] found a very neat-looking hostess with the romantic name of Buckles, waiting tea for us. She had some nice broiled chickens, apple sauce, bread and molasses, etc., set up in tempting array on a clean white cloth, and altogether, we had the most Christian-like meal, I think, since we left home.[31]

In addition to daily drill and picket duty, two companies of the Massachusetts regiment, assisted by three companies of the 29th Pennsylvania Infantry (based in Pleasant Valley) began constructing a road across the southern face of the mountain on August 15. Work continued with "picks, shovels, axes, and bars" until the 17th, when General Banks withdrew the Federals from the mountain and then moved his army south and east toward Darnestown.[32]

During September and October, 1861, only Companies I and K of the 13th Massachusetts Volunteer Infantry remained on Maryland Heights on outpost duty. The men of the 13th vigilantly watched Harpers Ferry and the Potomac shoreline for Rebel incursions, and they kept busy shooting at targets in the town. "Everything that moved about the streets they shot at vindictively," recalled town resident Joseph Barry: "The appearance of even a mullein leaf swaying in the wind elicited a volley . . . and it was lucky for the place that they were indifferent marksmen, else it would have been wholly depopulated."[33]

Corporal Austin C. Stearns of Company K remembered firing from Maryland Heights with weapons other than small arms. For example, after discovering "two old twelve pound ship cannon," Stearns and his friends mounted the pieces and then "wired railroad spikes together" for the projectiles. As Stearns recalled the use of this contraption, he noted: "We fired several times at Loudoun Heights. A few spikes reached the shore, but the greater part fell into the river. They served for a scare if nothing more."[34]

The men of the 13th Massachusetts left the mountain in late October, 1861; and with the exception of a brief visit to Maryland Heights by General Banks and Vice President Hannibal Hamlin on January 3, 1862, the mountain remained quiet and abandoned until the late spring of 1862.[35]

The First Permanent Federal Occupation, Spring-Summer, 1862

Thomas J. "Stonewall" Jackson's sudden advance down the Shenandoah Valley deeply alarmed Federal authorities in Washington.

Jackson's Confederates had overwhelmed Maj. Gen. Nathaniel Banks' Federals at Winchester on May 25, 1862, and subsequently had chased the bluecoats out of the Valley and across the Potomac River at Williamsport. This success prompted Jackson to detach the "Stonewall" Brigade from his main army on May 28, with orders to "make a demonstration toward the Potomac" and advance against the Federal garrison at Harpers Ferry.[36]

Jackson's swift success forced the Federal War Department to rush reinforcements toward the beleaguered Valley front; and on May 25, two Pennsylvania regiments arrived at Harpers Ferry accompanied by Brig. Gen. Rufus B. Saxton. Saxton immediately assumed command at Harpers Ferry; and in a series of messages to the War Department, the general pleaded for artillery at his new post. As Saxton wrote on the 25th three hours after arriving at Harpers Ferry: "In case we are attacked two light batteries and two 8-inch howitzers would be of great service to command the river and bridge. There is no artillery here."[37]

Secretary of War Edwin M. Stanton responded immediately to Saxton's request by dispatching artillery from Baltimore and from the Washington Navy Yard. The Naval detachment, under the command of Lts. C. S. Daniels and Ulric Dahlgren, arrived at Harpers Ferry late on the evening of May 26. By late morning of the next day, Daniels reported one 9-inch Dahlgren gun in position upon Maryland Heights.[38]

The Naval Battery, or "Battery Stanton", towered approximately 400 ft. above the Potomac on the southwest slope of Maryland Heights. It completely commanded Bolivar Heights and Camp Hill, and as General Saxton reported, its elevation enabled the battery "to throw shells directly over the heads of our own forces on Camp Hill into the faces of the advancing foe."[39]

The battery first opened on Confederate intruders when it shelled Loudoun Heights on May 28. Three days later on the evening of the 31st, it showered a Confederate advance toward Bolivar Heights, and the Southerners quickly retired. Saxton's reports suggest that fire from the Naval Battery forced the Rebel retreat. In actuality, the Confederate movement toward Bolivar Heights was simply a feint; for General Jackson had ordered the Stonewall Brigade to return to the main army, which was withdrawing rapidly up the Valley to escape a Federal converging movement directed against Jackson's rear.[40]

With the Confederate threat in the Lower Valley removed, the 300 sailors and marines stationed at the Naval Battery returned to Washington on June 8, 1862.[41] They left behind, however, two 9-inch Dahlgrens and one 50-pounder gun. Soldiers from the 8th New York Cavalry then occupied the battery; but according to Col. Dixon S. Miles, now commanding at Harpers Ferry, the cavalrymen were in a "disorganized and mutinous condition . . . being dissatisfied at not being mounted and being armed as infantry." This prompted a request for men "capable of using the large guns," and on June 18, 1862, Company F, 5th New York Heavy Artillery, under command of Capt. Eugene McGrath, arrived at Harpers Ferry to man the Naval Battery.[42]

McGrath quickly perfected ranges with his Naval guns, and he used them on occasion to keep Confederate scouting parties at a safe distance west of Bolivar Heights. In fact, according to an account filed by a soldier with the 22nd New York State Militia (encamped on Camp Hill), McGrath's aim proved so good that he once destroyed an abandoned school house (on School House Ridge), over two miles distant from the Naval Battery, with one 9-inch shell.[43]

Yet the first earnest test for McGrath's good aim came in mid-September, 1862, when the "flower of Lee's army" suddenly swooped down upon the Federal garrison at Harpers Ferry.

The Siege and Capture of Harpers Ferry, September 12-15, 1862

On September 4, 1862, Robert E. Lee and his Army of Northern Virginia began splashing north across the Potomac River at White's Ford, approximately 25 miles south and east of Harpers Ferry. The first major invasion of the North had begun.

As the Confederates advanced into Maryland, Lee expected Federal authorities to order the northward withdrawal of Union forces garrisoning Harpers Ferry (11,000 men) and Martinsburg (3,000 men). Lee depended upon this Federal retrograde, in fact, because he intended to use the Shenandoah Valley as his line of communications and supply while campaigning north of the Potomac.

Federal strategists refused, however, to acquiesce to Lee's desires. Harpers Ferry commander Colonel Miles received orders to hold on "to the last extremity," and this Federal intransigence forced General Lee to adopt an audacious and risky scheme--Special Orders 191.

By the provisions of 191, Lee divided his army into four parts. Three would march upon Harpers Ferry, seize the three mountains surrounding the place, and capture or destroy the Union garrison there (Figure 4.1). When this mission ended, Lee instructed the Harpers Ferry detachment to rejoin the remainder of the army at Boonsboro, 20 miles north of Harpers Ferry. The Confederate commander issued these orders at Frederick on September 9, 1862; the movement commenced on the 10th.[44]

Lee assigned Maj. Gen. Lafayette McLaws the task of capturing Maryland Heights, and on September 11, McLaws and his force of 8,000 entered Pleasant Valley. One day later, the South Carolina brigade of Joseph Kershaw and William Barksdale's Mississippi brigade (totaling about 2,000 men) ascended Solomon's Gap and began pressing southward toward Harpers Ferry along the crest of Elk Ridge.

Progress was slow for the Southerners atop the mountain, as a jungle of undergrowth and persistent Federal picket fire annoyed the Confederate advance. Finally, after struggling south along an abandoned charcoal road for two miles, Kershaw's men encountered a tangled abatis on the crest. This abatis rested about 400 yards north of a Federal log and stone breastworks which ran perpendicular to the crest and was flanked on either side by precipitous and rocky mountain ledges. As dusk approached, a sheet of flame flashed forward from the abatis, convincing Kershaw "that the

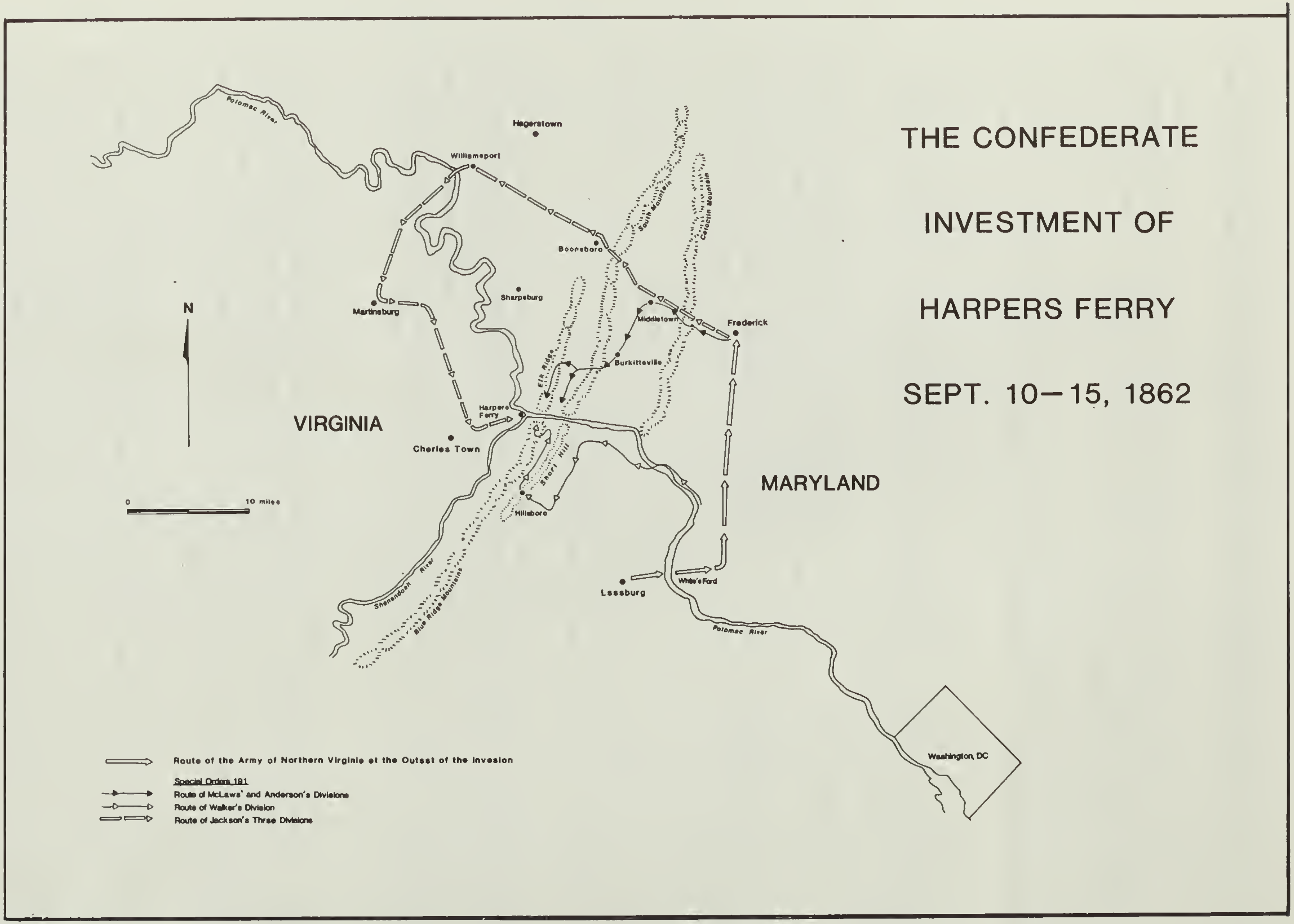

THE CONFEDERATE
INVESTMENT OF
HARPERS FERRY
SEPT. 10—15, 1862
VIRGINIA
MARYLAND
N
0
10 miles
Potomac River
Hagerstown
Williamsport
Boonsboro
Sharpsburg
Martinsburg
South Mountain
Catoctin Mountain
Middletown
Frederick
Burkittsville
Elk Ridge
Harpers Ferry
Charles Town
Short Hill
Hillsboro
Shenandoah River
Blue Ridge Mountains
Leesburg
White's Ford
Potomac River
Washington, DC
Route of the Army of Northern Virginia at the Outset of the Invasion
Special Orders 191
Route of McLaws' and Anderson's Divisions
Route of Walker's Division
Route of Jackson's Three Divisions

Figure 4.1

enemy occupied the position in force." The Confederates then halted, with both sides resting on their arms "within speaking distance of each other, and certainly not more than 100 yards apart." All were aware the decisive battle would be fought on the morrow.[45]

Col. Thomas H. Ford of the 32nd Ohio Volunteer Infantry commanded the brigade of Federal troops defending Maryland Heights. Colonel Miles had assigned Ford this position on September 5; and after an immediate examination of defensive preparations, Ford discovered that "no fortifications had been made . . . to resist a superior force."[46]

In an attempt to rectify his lacking defenses, Ford had requested a battery of artillery to command Solomon's Gap "so as to repel almost any force." Colonel Miles rejected this suggestion, compelling Ford to offer a second alternative--planting a section of artillery at the "Lookout" (signal station) atop the crest of the mountain. Colonel Miles rejected this idea as well. "I was told by Colonel Miles," wrote Ford, "that if I and Captain McGrath [commander of the Naval Battery] had our way, we would have all the artillery at Harper's Ferry on Maryland Heights."[47]

Ford failed to acknowledge that Miles had bolstered the number of guns at the Naval Battery, adding two 12-pounders on the 10th and two more 12-pounders on the following day. With the addition of these four pieces, McGrath constructed a breastworks for their protection, and he also cut back 100 yards of woods north of the Naval Battery to allow support fire in the direction of the crest.[48]

The Federal breastworks stretching across the crest had been constructed on September 11 by Captain John T. Whittier of the 1st Maryland Potomac Home Brigade. Aligned behind the breastworks on the morning of the 13th were six companies of the 32nd Ohio Infantry on the right and eight companies of the 126th New York Infantry in the middle and on the left. A battalion of the 39th New York Infantry and three companies of the 1st Maryland Potomac Home Brigade formed a second line. Colonel Ford was not posted on the crest on the 13th, but he remained at his headquarters (the Buckles house) on the southwest slope near the Naval Battery.[49]

The battle on the crest commenced "with great fury" about 6:30 a.m. on Saturday the 13th. Two lines of Kershaw's South Carolinians advanced toward the abatis, and after about 20 minutes, the Federals skirmishers retired 400 yards south to a position behind their breastworks. Here the Confederate troops encountered "a most obstinate resistance" and "a fierce fire," resulting in a heavy loss in Kershaw's brigade.[50]

As the opponents battled it out on the crest, General Barksdale's Mississippi brigade advanced down the eastern slope of the mountain in an attempt to flank the Federal right at the breastworks. Then a significant event occurred. About 10:30 a.m., just before Barksdale completed his maneuver, a bullet pierced the jaw of Eliakim Sherrill, colonel of the 126th New York, and the regiment holding the center of the Union line. The loss of Colonel Sherrill panicked some in the 126th (the regiment had been in the service only three weeks), and the Federal defense at the breastworks soon collapsed. The Union soldiers quickly withdrew about one-quarter mile south, and the Confederates possessed the empty breastworks after facing four hours of stubborn resistance.[51]

Precisely what happened at the breastworks soon generated considerable controversy. During the subsequent court inquiry which investigated the surrender at Harpers Ferry, some testified that when Colonel Sherrill received his wound, the inexperienced 126th panicked, fleeing from the breastworks and dashing down the mountain in ignominious disorder. Others explained that shortly after Colonel Sherrill's wounding, mysterious orders arrived demanding that the breastworks be abandoned and that the Union force withdraw to a new position. From the Confederate standpoint, General Kershaw claimed that a Mississippi company prematurely fired at the Federal right flank, compelling the whole Union line to break "into a perfect rout."[52]

Whatever the reason for the loss of the breastworks, the Federals had regrouped on the crest about 400 yards south of their former position. For over three hours, the Union men waited for another Confederate thrust, but no more Southern attacks developed. Then occurred the unexpected. Between 3:00-3:30 p.m., a breathless courier arrived atop the ridge possessing Thomas Ford's peremptory dictum: "You are hereby ordered to fall back to Harper's Ferry in good order," the message proclaimed. "Be careful to do it in good order."[53]

Dumbfounded Federal defenders exchanged incredulous glances. "Had an order been given to surrender to the enemy," recalled a flabbergasted Lt. S. F. Adams of the 126th New York, "we should not have been more surprised, for in abandoning that position, we saw plainly that everything was lost."[54]

General Lafayette McLaws agreed. In his post action report filed on October 13, 1862, the Confederate commander wrote: "So long as Maryland Heights was occupied by the enemy, Harper's Ferry could never be occupied by us."[55]

As the dejected Federals descended the mountain road leading by the Naval Battery, they witnessed McGrath's men spiking the heavy Navy guns and toppling them off their carriages. McGrath also spiked the 12-pounders after using them to cover the Federal withdrawal.[56]

Although Confederate infantry now occupied the mountain unopposed, the Rebel riflemen could cause little harm to the Union garrison, now posted primarily on Bolivar Heights. General McLaws therefore ordered artillery to the crest of Maryland Heights; and throughout the morning of September 14, Confederates labored to reopen an abandoned charcoal road ascending the mountain's eastern slope from Pleasant Valley. By early afternoon of the 14th, with the road successfully cleared, four 10-pounder Parrott rifles had been placed in position on the crest; and at 2 p.m., in conjunction with Confederate artillery on Loudoun Heights and Schoolhouse Ridge, the guns on Maryland Heights commenced bombarding the trapped and hapless Federals on Bolivar Heights.[57]

About two hours before the Confederate shelling began, four companies of Union infantry (two from the 39th New York and two from the 65th Illinois) recrossed the Potomac and temporarily repossessed the Naval Battery on the mountain's southwest slope. While at the battery, the Federals encountered no Confederates, and they subsequently returned to Harpers Ferry with the four 12-pounder guns and a great deal of ammunition abandoned during the previous day's retreat. This unopposed return to the mountain did not, however, result in any later Federal attempts to repossess Maryland Heights.[58]

The Confederate bombardment of the Union garrison continued until dusk on the 14th, then reopened again at dawn on the 15th. With his position completely surrounded and his long-range ammunition expended, Union commander Miles held a council-of-war, and about 9 a.m. on the 15th, the Federals raised the white flags of surrender. Approximately five hours later, General McLaws withdrew his artillery from Maryland Heights, and then crossed the Potomac at Harpers Ferry to escape the advance of the Union Sixth Corps down Pleasant Valley.[59]

The campaign to capture Harpers Ferry had ended.

Federal Reoccupation and Fortification, Fall-Winter, 1862-1863

Two days after the Federal surrender at Harpers Ferry on September 15, the Union and Confederate armies clashed at Sharpsburg, Maryland, in the bloody Battle of Antietam.

The battlefield stalemate at Antietam forced Lee to retreat into Virginia on September 18; and two days later, the Federal Twelfth Corps of the Army of the Potomac occupied Maryland Heights.[60]

As the 27th Indiana Volunteer Infantry led the Twelfth Corps south from Solomon's Gap down the spine of Elk Ridge, the Union men crossed the now ignominious battlefield of September 13. "All about us was the wreckage of the fighting . . . and the unburied bodies of the dead of both armies," recalled Miles Clayton Huyette of the 125th Pennsylvania Infantry. Maj. Gen. Alpheus Williams, temporary commander of the Twelfth Corps, recorded a similar scene: "The country people were picking up arms, and the stench proved abundantly what was said by them, that many bodies were still unburied."[61]

These human remains attracted considerable attention in contemporary letters and diaries. The stony, almost soilless summit, made burial almost impossible; and according to Huyette, to minimize the danger of pestilence, "the only thing we could do was to gather brush and logs and burn the bodies of the dead."[62] J. Strait, a Union soldier in an unidentified New York regiment, confirmed Huyette's account:

> I went to see a field of battle the other day, it was quite a sight for me. It was on the top of a hill . . . they had just got the rebles [sic] burnt we saw the bones of them. The reasons they burn them is because they do not have time to bury them, but our men are all buried in one hole on the top of the mountain.[63]

Rice C. Bull, a private in the 123rd New York Volunteer Infantry, also noticed the bodies. Almost one month after the battle on Maryland Heights, the burial place of nearly 40 Confederates on the crest had become "partly uncovered by the rain, so that hands and feet and even heads were visible." Even as late as mid-December, 1862, Frederick W. Wild of Alexander's Baltimore Battery of Light Artillery recalled seeing exposed bodies on the summit.[64]

Another topic which attracted considerable attention in the soldiers' contemporary accounts was President Abraham Lincoln's visit to Maryland Heights on October 2, 1862. Lincoln had arrived at Harpers Ferry the previous day to visit with Maj. Gen. George B. McClellan, commander of the Army of the Potomac, and to review the army and to congratulate it for its victory at Antietam. Before continuing north to Sharpsburg on October 2, McClellan and his staff escorted the President to the western base of Maryland Heights. As the party rode by the camps and reviewed the ranks of blue, many noted that Lincoln's awkwardness on a horse "did full justice to his reputation for homeliness.[65]

Following the formal review, Lt. Charles F. Morse of the 2nd Massachusetts received instructions to guide the presidential party to the summit of Maryland Heights. As Morse relates his story: "I showed the way until we got to a path where it was right straight up, when Abraham backed out. I think it must have reminded him of a little story about a very steep place; at any rate, around they turned and went down the mountain."[66]

Lincoln's visit to the army occurred as General Lee recuperated in the Lower Shenandoah Valley during the last weeks of September and throughout October, 1862. While Lee rested, McClellan had repositioned his Union army, sending the Second, Ninth, and Twelfth corps to the heights about Harpers Ferry and into camp in Pleasant Valley, Maryland.

McClellan considered the occupation of Harpers Ferry "a military necessity," and to best determine its permanent protection, McClellan personally reconnoitered Maryland Heights on September 26. His observations led to this conclusion: "I have determined to fortify [Maryland Heights]," McClellan wired General-in-Chief Henry W. Halleck on the 26th, "in order to avoid a similar catastrophe to the one which happened to Colonel Miles." With his opinion thus stated, McClellan selected Lt. Cyrus B. Comstock of his engineer staff to survey and layout the fortifications; and he requested contrabands from Washington to assist with the necessary labor.[67]

Comstock submitted his report on October 17, and he specifically recommended that the crests of Maryland and Loudoun Heights--for at least one and one-half miles from the Potomac--be occupied by "a line of stone blockhouses or redoubts."

According to Comstock"s plan, portions of this "line" would serve as an entrenched camp for 3,000 men. On one side of each camp would be stone blockhouses or redoubts; on the opposite side, log blockhouses, "which would furnish in part quarters for the troops." Comstock also recommended the crest be serviced by good roads so that the six or eight guns in each camp "could be moved readily from point to point." In summary, Comstock suggested five or six of these redoubts (or camps) necessary for each crest, with each placed on the slope of the mountain facing Harpers Ferry. Comstock estimated the overall cost of defenses for Maryland, Loudoun, and Bolivar Heights at $50,000.[68]

General McClellan enthusiastically endorsed Comstock's study on October 18, and he urged the War Department to consider the importance of "permanently occupying Harper's Ferry in great strength" and using it as a base of operations.[69]

Chief-of-Staff Halleck agreed to the necessity of fortifying Harpers Ferry, but he scaled down McClellan's grandiose permanent works to "field batteries and temporary blockhouses" easily defended with a "moderate garrison." As Halleck concluded in a letter to McClellan on October 20: "Harper's Ferry is not, in my opinion, a proper base of military operations, and it would be an error to expend time and money there for such an object."[70]

McClellan objected to Halleck's dilution of his plan, stating that he never intended to build "permanent works"; but Secretary of War Stanton adopted the Halleck version, and McClellan lost his bid to have all the heights about Harpers Ferry fortified.

On Maryland Heights, however, fortification did occur; and the first step in the project involved timber cutting. Edmund R. Brown of the 27th Indiana Infantry explained the process on the western slope of the heights:

> A line of axmen was formed at the first timber line above the camp and worked steadily upward, felling the trees downward. Most of the timber was chestnut, or chestnut oak, and, with a sharp axe, chopped beautifully. The work went on without interruption until the summit was reached. Later a detail was made to set fire to this fallen timber. It was hoped that when the leaves had dried, the whole of it would burn. This proved a mistake. The men had a free, romantic play-spell one evening in illuminating the mountain side, but after the leaves and twigs were consumed the blackened trunks and limbs mostly remained.[71]

Charles F. Morse of the 2nd Massachusetts Infantry also remembered the wood-cutting: "It is an interesting sight to see so many men at work at once felling trees," Morse wrote on October 20, 1862, while commanding a detachment of 100 tree-choppers. "[W]e began our labor at the bottom of a ravine and worked up a steep hill. Sometimes there would be as many as twenty or thirty fine trees falling at once; they reminded me of men falling in battle, that same dead, helpless fall."[72]

As the tree-trimming continued into the final week of October, 1862, work commenced on the fortifications as well. Skilled masons began laying rock at the Stone Fort and laborers began constructing the rampart at the 30-pounder Battery. Carpenters fashioned revetments and measured for platforms and blacksmiths sharpened dull tools. According to the returns of Lt. John M. Wilson, the engineer superintending this construction, work progressed steadily from November, 1862, through February, 1863. Wilson's returns show the government expending $6,762.88 of the $10,000 allotted for this work during the four month period noted above. Wilson's returns also show the height of employment occurring in January, with 168 men appearing on the work rolls. Of this total, 142 are listed as "soldiers as laborers."[73]

Work apparently ended in mid-March, 1863, with Wilson's sudden transfer to assist with operations at Yazoo Pass, Mississippi. As a result, most of the fortifications on Maryland Heights remained incomplete.[74]

Maryland Heights during the Gettysburg Campaign, June-July, 1863

Following the Confederate rout of Union forces at the Second Battle of Winchester on June 13-15, 1863, the Federal garrison at Martinsburg, as well as remnants of the Union command from Winchester, hastily retreated down the Valley to Harpers Ferry and Maryland Heights.[75]

Brig. Gen. Daniel Tyler, who had been commanding at Martinsburg for less than 24 hours, arrived at Harpers Ferry with his troops at 6 a.m. on the 15th. Four hours later, he received orders to take command of all forces in and around Harpers Ferry.[76]

Tyler immediately conducted an inspection of his new post, and his personal examination satisfied him "that the defenses on the Maryland side had been sadly neglected, and were not in a condition to respond to the expectations of the Government." To correct these imperfect conditions, Tyler requested the assistance of Col. William F. Raynolds--chief engineer of the Eighth Corps, and one intimately acquainted with the Harpers Ferry area. Raynolds subsequently departed from Eighth Corps headquarters at Baltimore at 5:30 p.m. on the 15th, and he arrived at Harpers Ferry via rail at 11 p.m. the same evening. The next morning, Tyler instructed Raynolds to reorganize and complete the defenses located on the Maryland side of the river.[77]

Raynolds came well prepared for his new assignment. During the last week of April and first week of May, 1863, he had accompanied Brig. Gen. John G. Barnard--chief engineer of the defenses of Washington--on an inspection of the Harpers Ferry defenses. Barnard had summarized his numerous suggestions in a May 5 memorandum to Raynolds, and this had prompted Raynolds to conduct further examinations of the area. Thus, when Tyler's call for assistance occurred on June 15, Raynolds "at once set about carrying out previously well-digested plans."[78]

Tyler detailed 1,500 men to assist Raynolds with his emergency improvements, and on the 16th, work began in earnest. Specific improvements upon Maryland Heights included clear-cutting of timber on the mountain's eastern slope from a point north of the Stone Fort 1,500 yards south to the 30-pounder Battery; removal of a 50-pounder Dahlgren gun from the Naval Battery to a "spur" on the western; construction of breastworks along this "spur" up the western slope toward the crest; raising the rifle pits north of the Stone Fort into a 9-10 ft. parapet; mounting the "howitzer battery" behind this parapet in embrasure rather than barbette; construction of temporary banquettes in the Stone Fort for use as a "citadel" atop the crest; removal of a 9-inch Dahlgren gun from the Naval Battery to the crest, 600 yards south of the Stone Fort; and construction of stone breastworks along the east side of the crest from the Stone Fort south to the 30-pounder Battery.[79]

Work progressed continuously from the 16th to the 27th despite an insufficient supply of entrenching implements and axes. By June 22, in fact, Raynolds had wrought such improvements that General Tyler proudly reported to Maj. Gen. Joseph Hooker, commander of the Army of the Potomac: "I expect to hold Maryland Heights against any force that will be brought against it."[80]

No Confederates advanced against Maryland Heights, however, even though Lee's army had crossed the Potomac. The Southerners had begun wading the river at Shepherdstown on June 18, 1863, but instead of turning east, the Rebel columns had continued marching north into Pennsylvania. As Joseph W. Kirkley of the 7th Maryland Infantry recorded from his Maryland Heights stoop on June 25: "The evidence of a heavy force in front of us and around us continues to be visible. For several days past, we have seen trains of wagons of almost endless length, creeping along our front from left [south] to right [north]."[81] The signal station on Maryland Heights reported on June 24 Confederate wagon trains stretching from Berryville to Sharpsburg.[82]

With the Confederates avoiding Maryland Heights by simply passing around it, General Hooker requested on June 27 that the garrison be withdrawn from the mountain and allowed to join his main army. "I find 10,000 men here, in condition to take the field," Hooker lamented to General-in-Chief Halleck. "Here they are of no earthly account. They cannot defend a ford of the river, and, as far as Harper's Ferry is concerned, there is nothing of it."[83]

Hooker's insistence that the Maryland Heights' garrison be removed to the field received no support at the War Department; and in fact, Hooker's intransigence on this issue helped hasten his ouster as commander of the Army of the Potomac. Lincoln named Maj. Gen. George G. Meade as Hooker's replacement on June 27, 1863; and in the same order authorizing Meade's command, Lincoln placed Harpers Ferry and its garrison under Meade's "direct orders."[84]

Given instructions that he could "diminish or increase" the Harpers Ferry garrison as "circumstances justify," Meade ordered the evacuation of Maryland Heights on June 28, 1863. The order instructed Maj. Gen. William H. French, now commanding on Maryland Heights, to remove all property from the defenses to Washington, D. C., via the C & O Canal. General-in-Chief Halleck further instructed French not to destroy ammunition or stores "excepting in the case of absolute necessity."[85]

French commenced the evacuation on the evening of the 29th; and for 17 consecutive hours, teams and troops hauled stores, ammunition, and guns from the Maryland Heights defenses to boats on the C & O Canal. The evacuation did not proceed without incident, however. Joseph Kirkley of the 7th Maryland Infantry recalled "rain pouring in sheets" on the 30, transforming the mountain's roads into "beds of torrents." Wagons became snagged in quagmires, forcing delays and frustration in the ranks. The uncooperative weather prevented the withdrawal of great quantities of stores; and salt beef, pork, beans, rice, coffee, sugar, and other provisions consequently remained behind.[86]

On several occasions, the evacuation became deadly. Accounts of an accidental explosion at the 30-pounder battery, caused when an overzealous artilleryman attempted to defuse a shell with an old railroad spike and stone, killed nine people and wounded 12 others. As Joseph Kirkley remembered, the explosion "above us filled the air with fragments of shell, rock, and timber, and shocking to add, limbs without bodies, and bodies without limbs fell at our very feet." Another accidental explosion occurred at the "howitzer battery" just north of the Stone Fort.[87]

Company H of the 1st Massachusetts Heavy Artillery covered the Federal withdrawal on the 30th. With the shipments of stores and ordnance on the canal out of range of the Maryland Heights guns, at about 10:30 a.m. on July 1, Major Horace Holt ordered the heavy artillery left behind at the 100-pounder battery and the Naval Battery spiked. With the guns spiked and toppled from their carriages, the final Federal troops on Maryland Heights began marching to join their comrades at Frederick.[88]

On July 6, 1863, three days after Lee's final attack at Gettysburg, General French ordered Brig. Gen. John R. Kenly's Maryland Brigade to proceed from Frederick and to reoccupy Maryland Heights. French issued this instruction in conjunction with General Meade's desire to "annoy and harass" the Confederate retreat. Kenly reoccupied the mountain on the morning of July 7, and never again during the war did the Federals evacuate Maryland Heights.[89]

Jubal Early's Invasion, July, 1864

Nearly one year passed before Maryland Heights again witnessed Confederate encroachment. This time the invader proved the Second Corps of the Army of Northern Virginia, now commanded by Lt. Gen. Jubal A. Early.

A Federal drive against strategic Lynchburg had compelled General Lee to detach Early's force to the Shenandoah Valley on June 12, 1864. Early immediately departed from the main army position east of Richmond, and after a forced march aided by railroad, Early arrived at Lynchburg early on the afternoon of the 17th. After a brief demonstration on the 18th, the Federals threatening Lynchburg abandoned their offensive and retreated west into the mountains of West Virginia. This opened the Shenandoah Valley for a Confederate drive to the north.[90]

By July 2, Early's 14,000 veterans had reached Winchester; and on the next morning, the Confederates commenced a thrust designed to force all Federals out of the Lower Shenandoah Valley.

Early directed the divisions of John C. Breckinridge and John B. Gordon north down the Valley Pike to flush out the Union garrison at Martinsburg commanded by Maj. Gen. Franz Sigel (Figure 4.2). Meanwhile, the divisions of Robert Rodes and Dodson Ramseur swung north and east through Jefferson County to cut off Sigel's retreat via Shepherdstown. In addition, John McCausland's Confederate cavalry marched north and west toward North Mountain to capture the rear of Sigel's position. "Old Jube" expected this pincer movement to trap Sigel's 3,500 men.[91]

A determined retrograde at Leetown and Kearneysville, however, by Col. James A. Mulligan and his 23rd Illinois Volunteer Infantry foiled the Confederate plan. Mulligan's determined stand allowed Sigel to escape across the Potomac via Boteler's Ford at Shepherdstown. Once across the river, Sigel turned south; and by 8 p.m. on July 4, his force began forming behind the defenses of Maryland Heights.[92]

As Sigel was withdrawing toward Maryland Heights, Brig. Gen. Max Weber and his command at Harpers Ferry awaited the next Confederate thrust. At 8 a.m. on July 4, the signal officer at the Stone Fort reported the approach of a large enemy force from the direction of Charles Town (Rodes and Ramseur's divisions). By 10 a.m., skirmishers from the two Confederate divisions encountered Federal cavalry on Bolivar Heights; and when the bluecoats withdrew behind their Camp Hill defenses, the Union artillery on Maryland Heights blasted the Rebel advance. "[A]ll the artillery possible are brought into use," recalled signal corps Sergeant James Montgomery. "[Our] heavy cannonading continues all day without soliciting any reply."[93]

The fierce bombardment from Maryland Heights certainly affected the Confederate advance. As General Early witnessed the movement, he reported it impossible to occupy Bolivar and Harpers Ferry "except with skirmishers, as it was thoroughly commanded by the heavy guns on Maryland Heights." Harpers Ferry Provost Marshal clerk Charles Moulton agreed with Early's

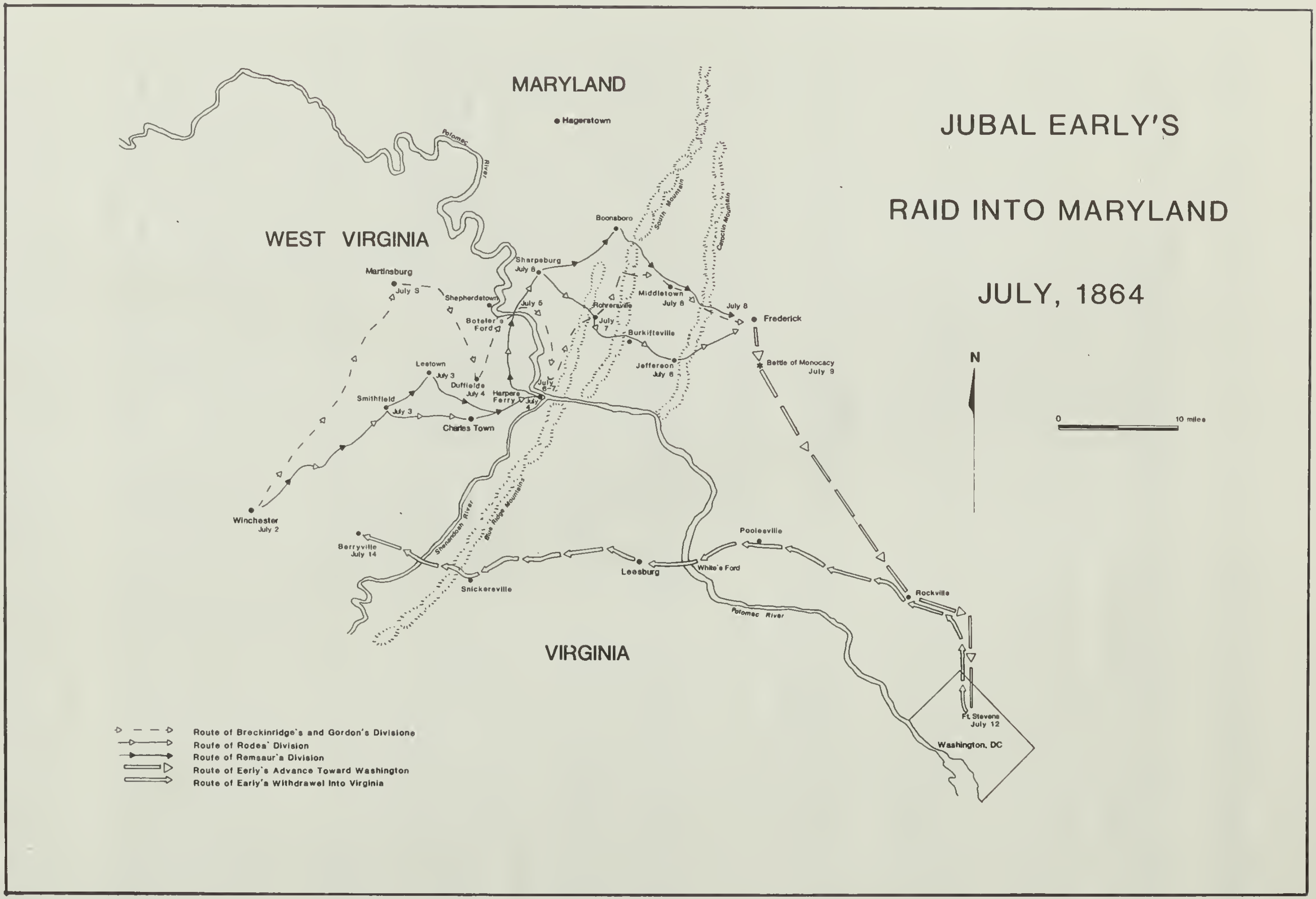

JUBAL EARLY'S
RAID INTO MARYLAND
JULY, 1864
MARYLAND
Hagerstown
WEST VIRGINIA
VIRGINIA
Potomac River
Boonsboro
South Mountain
Catoctin Mountain
Sharpsburg
July 6
Martinsburg
July 5
Shepherdstown
July 5
Boteler's Ford
Rohrersville
July 7
Middletown
July 8
July 8
Frederick
Burkittsville
Jefferson
July 6
Battle of Monocacy
July 9
N
0
10 miles
Leetown
July 3
Duffields
July 4
Smithfield
July 3
Harpers Ferry
July 4
July 6-7
Charles Town
Winchester
July 2
Shenandoah River
Blue Ridge Mountains
Berryville
July 14
Snickersville
Leesburg
White's Ford
Poolesville
Rockville
Potomac River
Ft. Stevens
July 12
Washington, DC
Route of Breckinridge's and Gordon's Divisions
Route of Rodes' Division
Route of Ramseur's Division
Route of Early's Advance Toward Washington
Route of Early's Withdrawal Into Virginia

Figure 4.2

assessment. The Confederates on Bolivar Heights, according to Moulton, "showed no force, but slowly staggered along. Whenever they showed themselves in a group our shells soon scattered them."[94]

Despite the effective Union bombardment, Weber ordered the evacuation of the Camp Hill line and Harpers Ferry between 6 p.m. and 7 p.m. on the 4th. All stores, with the exception of forage, had been safely removed to the Maryland side of the river, and the Federals destroyed the pontoon bridge and railroad bridge to insure no easy Confederate pursuit.[95]

This situation forced General Early to devise a new strategy. "You will move at once to Boteler's Ford . . . and cross over [the Potomac] to Sharpsburg," Early instructed Generals Breckinridge and Gordon at 8 a.m. on the 5th. Disappointed that the Federals had not abandoned Maryland Heights, Early continued by ordering Gordon's division "down toward Harper's [sic], so as to compel the evacuation of Maryland Heights." The Second Corps commander finished his message with a tone of urgency: "Promptness and dispatch are absolutely necessary."[96]

Gordon bivouacked at the Antietam Iron Works on the night of the 5th, and this Confederate incursion into Maryland did not go unnoticed by the Stone Fort signal station. "I reported the movement to General Sigel," noted chief signal officer Lt. Amos Thayer, "and ventured to predict that on the morning of the 6th we should be attacked from the Maryland side."[97]

Little information exists detailing Federal and Confederate deployment and movement on July 6, 1864. Morning Reports of the 135th Ohio National Guard reveal this regiment detached as skirmishers north of the Barnard Line (the Federal defensive works running east from Fort Duncan to the western base of Maryland Heights), with its advanced position as far north as the John Brown schoolhouse--a famous local landmark noted for its stash of John Brown weapons in 1859. The regiment remained in this position until 2 p.m., when Gordon's advance forced it to retire.[98]

According to a nondescript map prepared by Confederate engineer Jedediah Hotchkiss, Gordon advanced his three brigades toward the Barnard Line in this arrangement: Evans on the left; York in the middle; and Terry on the right. General Sigel reported the Confederates advanced with a brigade against his left (west and north of Fort Duncan) "where our lines were the weakest." Sigel countered this movement with an attack against Gordon's left; but he provided no additional details, other than the enemy "showed an extensive line from the Potomac to Elk Ridge Mountain" which Sigel estimated at 3,000 infantry.[99]

On the 7th, Gordon, reinforced by Breckinridge, advanced to within 600 yards of the Barnard Line; and as General Sigel described: "[T]he enemy made preparation for a general attack on our northern line, and tried to bring his artillery in position. Was unable to do so on account of field batteries and heavy pieces in the forts, which shelled their artillery, infantry, and trains for a distance of four miles."[100]

Frustrated by the obstinance displayed by the Maryland Heights defenders, Jubal Early again changed his strategy. On the evening of the 7th, "Old Jube" directed Breckinridge and Gordon to withdraw north, and then to move east across South Mountain as part of the general movement of the entire Second Corps. As Early later explained:

> My desire had been to manoeuvre [sic] the enemy out of Maryland Heights, so as to enable me to move directly from Harper's Ferry for Washington; but he had taken refuge in his strongly fortified works, and as they could not be approached without great difficulty, and an attempt to carry them by assault would have resulted in greater loss than the advantage to be gained would justify, I determined to move through the gaps of South Mountain to the north of the Heights.[101]

On the morning of July 8, 1864, the signal station on Maryland Heights reported: "No signs of the enemy could be seen in our front." General Early's army was marching toward Frederick, eventually proceeding to the outskirts of Washington, D. C., and closer to the Union capital than any other Confederate force during the war.[102]

Maryland Heights had met its final test of the Civil War. Never again did the Confederates threaten the "citadel of Harpers Ferry."

CHAPTER V
CIVIL WAR FORTIFICATIONS

Upon Maryland Heights stand some of the best-preserved Civil War field fortifications within the National Park System.

Crowning the highest ridge overlooking Harpers Ferry, these defenses helped protect the Federal army's strategic supply base at the gateway into the Shenandoah Valley and offered deterrence against Confederate invasion of the North. Constructed by Union soldiers in 1862 and 1863, these formidable earth and stone works remain today as weathered and silent witnesses to America's bloodiest war.

Eight major fortifications sit upon Maryland Heights, seven of which lie within the 763-acre boundary of Harpers Ferry National Historical Park. Other fortifications west of Maryland Heights--such as Fort Duncan, Battery Sullivan, and the Barnard Line--also served as part of the Harpers Ferry defenses, but these sites receive limited attention in this study since they fall outside the confines of Harpers Ferry National Historical Park.

This chapter subdivides into four sections. The first discusses the history of the fortifications as revealed through contemporary sources and previous Park Service research. Then follows a detailed description of the archeological remains of seven separate defenses, recorded 125 years after their construction. Third, an analysis and comparison of the archeological and historical data yields an interpretation for each site. The chapter concludes with a brief summary of the findings of this study.

HISTORICAL BACKGROUND

Previous Research

In the years prior to the Civil War centennial, Charles W. Snell, supervisory historian at the then Harpers Ferry National Monument, conducted extensive research on the Civil War defenses of Harpers Ferry.

Snell's efforts resulted in a four-volume study which focused not just upon Maryland Heights, but upon all the fortifications associated with the defense of Harpers Ferry. The blockhouses on Loudoun Heights, the entrenchment and redoubts on Bolivar Heights, the Fort Duncan-Barnard Line defenses on the north side of the Potomac River, and the fortifications on Maryland Heights all received attention in Snell's thorough reports.

While conducting his research, Snell undertook a visual inspection of the grounds; and in some cases, he even measured and reported on the condition of defenses he discovered. As a result of these inspections and his documentary research, Snell produced base maps (in draft version) for each of his four reports. These maps attempted to illustrate the evolution of the fortifications and general troop movements which occurred during the various campaigns about Harpers Ferry.

With Snell's enormous task completed by 1960, it became the standard reference work pertaining to the Civil War defenses of Harpers Ferry.

Charles Snell's work, however, only began the understanding of Maryland Heights. Although his research effort produced a thorough examination of the Official Records, Snell investigated few other sources. Regimental histories, personal narratives, newspaper articles, and unpublished letters and diaries still required careful inspection. More importantly, features on Maryland Heights other than ramparts and parapets required survey and proper recording. Civil War campgrounds covered the mountain; miles of roads sliced across its slopes. Many unanswered questions remained concerning the physical history of Maryland Heights.

This report is designed to complement, not supplant, the work of Charles Snell. Historian Snell swiped a path through the wilderness; this project principally widens his road. Snell's four volumes, combined with the information contained within this report, should provide the student of history with a comprehensive understanding of the history of Maryland Heights.

Methodology and Sources

A Compilation of the Official Records of the War of the Rebellion, hereafter cited as the Official Records, served as a primary source of information regarding the fortifications of Maryland Heights.

Many government records were not published in the Official Records, however, and these sometimes prove extremely helpful. Regimental letter and order books, morning reports, and descriptive lists often contain specific data on the location and duties of a regiment. Many of these records are filed at the National Archives in Washington, D. C.

Published regimental histories and personal accounts, as well as newspapers and unpublished diaries and letters, often present data not found in official reports. For example, an explosion of a magazine during the evacuation of Maryland Heights on June 30, 1863, receives no official notice, but personal and regimental accounts vividly describe the pandemonium.

Examination of these sources proved the primary task of the project historian. Holdings at the National Archives, the Library of Congress, and the U.S. Army Military History Institute at Carlisle, Pennsylvania, received careful scrutiny. Collections at libraries and historical societies in states which had troops stationed on Maryland Heights also were examined.

The volume of data generated by this project necessitated the organization of documentation into five major categories: physical history; social history; campaigns; troops on Maryland Heights; and camp locations. Each of these broad topics was further divided into subcategories. For example, under "physical history" falls the subcategory "fortifications," which further subdivides into individual forts on Maryland Heights. For example, in mid-June, 1863, Col. William F. Raynolds removed a 9-inch Dahlgren gun from the Naval Battery to the 100-pounder Battery. Under the system outlined above, this subject would be filed in the "Physical History" notebooks under three subcategories: Naval Battery, 100-pounder Battery, and Artillery (subcategory 9-inch Dahlgren). All notebooks are arranged alphabetically, and within each subcategory, all topics are arranged chronologically.

Whenever discovery of data occurred, the following procedure was followed: (1) subject copied either by hand or electrostatic reproduction; (2) subject analyzed and cross-referenced for topic(s) and date(s); and (3) subject filed under appropriate category in notebook(s).

Bibliographic data on notebook entries remained minimal (author, title, and page number). For full bibliographic citation, one must consult the master bibliography.

Historical Background

Several significant sources, in addition to the Official Records, served as the primary basis for the discussion which follows.

Contemporary maps proved invaluable. William Luce's October, 1862, map showed the first fortifications on Maryland Heights; George Kaiser's January, 1863, map provided splendid details of the fortifications; and Kaiser's work remained unsurpassed by all other cartographers which followed.

A rough sketch map by Col. P.A. Porter, 8th New York Heavy Artillery, answered some questions about troop positions and armaments. The Michler map of August-September, 1863, remained a standard reference; and the postwar 1865 John Donn map proved particularly helpful in comparative analysis.

Several documents also helped generate a better understanding of the Maryland Heights defenses. Cyrus B. Comstock's notebook, which revealed important comments and drawings, proved a favorite find in the Library of Congress. Engineer John Wilson's returns for fortification construction from November, 1862, through February, 1863, were especially fascinating. The inspection of Brig. Gen. John G. Barnard in May, 1863, followed by Col.

William F. Raynolds' report on improvements of the defenses, certainly provided important insights into the evolution of the fortifications. Edward Ramsay's postwar inspection offered some opportunity for comparative analysis.

A circa 1870-1876 stereograph of the Stone Fort area recently entered the park collection, and it proved an important tool in analyzing the original condition of the Stone Fort.

With the primary sources revealed, the assessment now begins.

Stone Fort

At the highest point on Maryland Heights (1448 ft) stands the Stone Fort, the largest and most massive Civil War stone structure within Harpers Ferry National Historical Park.

Located approximately one and one-half miles north of the confluence of the Potomac and Shenandoah rivers, Union engineers designed this fortification as an infantry blockhouse to ward off Confederate attack via the crest of Elk Ridge. Although the Federals completed the foundation of this mountaintop structure, documentary evidence indicates the Northerners never constructed a superstructure above the enormous blockhouse foundations.

The fortunate discovery of original plan drawings and construction details for the Stone Fort provides precise data on the origin and subsequent evolution of this unusual fortification. No drawings with such explicit details have been discovered for other Maryland Heights fortifications.

A plan view of the Stone Fort showing dimensions and angles appears in Cyrus B. Comstock's diary in the fall of 1862. As an engineer in the Army of the Potomac, Comstock examined and surveyed defensible points about Harpers Ferry for army commander George B. McClellan. Following his assessment of the terrain, Comstock specifically recommended on October 17 that the crests of Maryland and Loudoun Heights be held for a mile and a half from the Potomac. To effect this proposal, Comstock urged the construction of "a line of stone block-houses or redoubts."[1]

The rough sketch of the Stone Fort which appears in Comstock's diary is identified as "Stone block house at Sig[nal] Sta[tion] Md. Heights--laid out Oct. 10/62--Lt. Suter."[2]

The blockhouse designed by Lt. Charles Russell Suter (another engineer) generally is rectangular, with square bastions attached at the northeast and southwest corners (Figure 5.1). The west wall measures 152 ft while the parallel east wall stretches 156 ft. Suter's drawing shows both the north and south walls at 44 ft, with the north wall angling slightly northeast to its junction with the northeast bastion. Wall width is listed at only one location--4'6" for the west wall--but the uniform outline of the foundation

LT. CHARLES SUTER'S ORIGINAL PLAN FOR STONE FORT OCTOBER 10, 1862

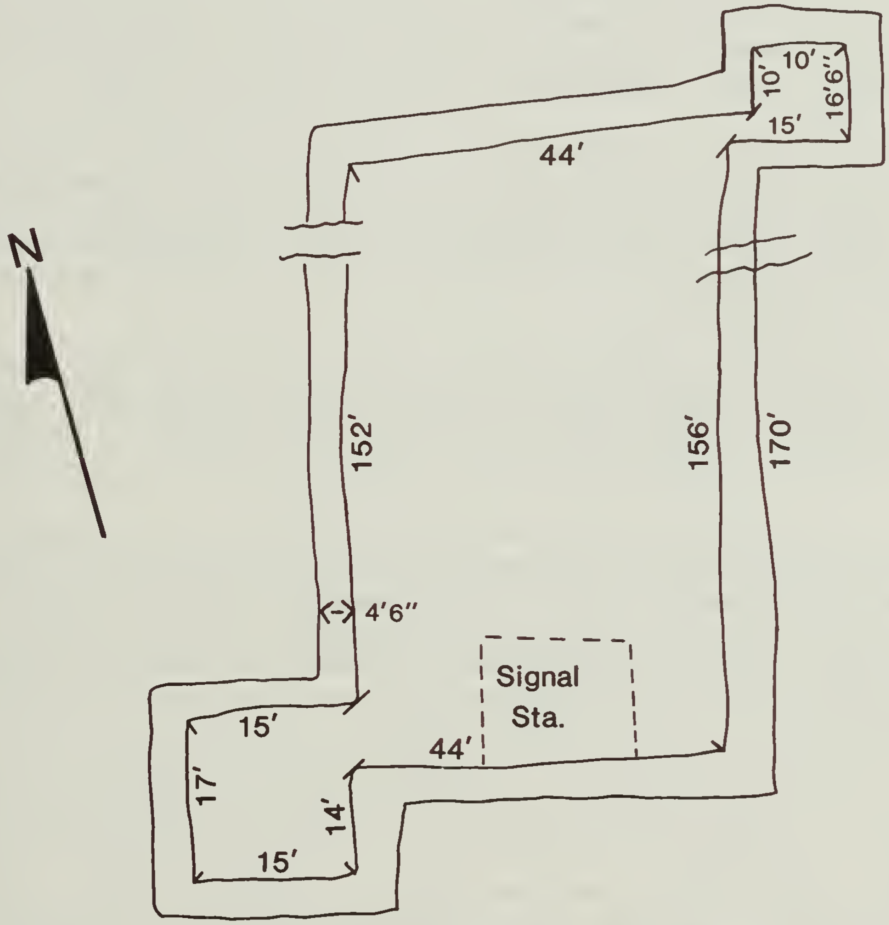

N
10'
10'
16'6"
15'
44'
152'
156'
170'
4'6"
Signal
Sta.
15'
44'
17'
14'
15'

Figure 5.1

suggests the 4'6" width applies for the entire blockhouse foundation.

Of the two bastions, the southwest structure is the larger, measuring 17 ft on its east and west sides and 15 ft across its north and south ends. Access is through a 3-ft opening in the northeast corner of this bastion. The smaller northeast bastion is drawn as a square, but its measurements belie uniform dimensions. For example, the north wall (10 ft across) is 5 ft shorter than the south wall. An opening is included in the southwest corner of this bastion.

The drawing includes a dotted line in the shape of a square within the main rectangular foundation. This feature, which is centered against the south wall of the blockhouse, is identified as the signal station. No dimensions are listed for this structure.

Precisely when construction of the Stone Fort commenced remains unknown. The War Department granted final approval for fortification construction upon Maryland Heights on October 20, 1862. Three days later, General McClellan received notification of this decision. Based on McClellan's desire to push forward the works "at once," it is probable construction of the Stone Fort began during the last week of October, 1862.[3]

Monthly returns filed by Lt. John H. Wilson--an engineer who arrived at Harpers Ferry on November 11 to develop the area's defenses--provide a summarized record of fortification construction from November, 1862, through February, 1863. Each month's statement outlines accomplishments in general terms, and Wilson specifically details costs and labor in a methodical, bookkeeper's fashion.[4]

Wilson's returns for each of the four months show masons building a "dry stone blockhouse." Since Wilson consistently refers to this "blockhouse" in the singular, it suggests the masons are employed on the Stone Fort. At no point, however, does Wilson refer to this structure as the Stone Fort.

Monthly returns for November and December, 1862, show 28 masons and one master mason employed on construction of the blockhouse. This number drops dramatically in January, 1863, to 12 masons and one master mason. February returns reveal a further reduction, with seven masons and no master mason on the rolls. Three enlisted men are listed as masons on the February roster--the first time Wilson shows enlisted men participating in this occupation.[5]

No further returns exist after February, 1863. Lieutenant Wilson was transferred to Yazoo Pass, Mississippi, on March 17, 1863; and apparently no engineer immediately replaced Wilson to complete construction of the Stone Fort. This fact is substantiated in the May 5, 1863, memorandum of Brig. Gen. John G. Barnard, whose inspection report of the defenses of Harpers Ferry recommended the "citadel [Stone Fort] be finished according to design."[6]

Although lacking in specific detail, the George Kaiser "Military Map of Harpers Ferry" (January, 1863) is the first official source to refer to the blockhouse as the Stone Fort (Figure 5.2). In Kaiser's sketch showing the defenses and campgrounds atop the crest of Maryland Heights, the outline of the Stone Fort generally follows the original design of Lieutenant Suter--a rectangle with square bastions attached at the northeast and southwest corners. Kaiser's version differs from Suter's drawing, however, in two important aspects: (1) Kaiser shows openings at the midpoints of the north and south walls; Suter's drawing shows no openings; and (2) unlike in the Suter drawing, no signal station appears within the structure on the Kaiser map. A comparison of dimensions between Kaiser and Suter is difficult to determine since the Kaiser illustration and map scale are both quite small.[7]

Following General Barnard's inspection of the Harpers Ferry defenses during the last week of April and first week of May, 1863, Barnard specifically recommended that artillery be placed within the Stone Fort, or "citadel." In a sketch which accompanied his report, Barnard drew an unscaled outline similar to Suter's design, which recommended gun positions at points identified by three capital letters (Figure 5.3). Artillery at letters "A" and "B," Barnard reasoned, would defend the eastern slope of Maryland Heights against a flank attack. A gun at "C" would help protect the crest. Barnard suggested timber banquettes at these three positions rather than platforms made of earth.[8]

General Barnard labelled the Stone Fort a "keep," and as such, he suggested adding a secure structure "to contain provisions and water tanks." Barnard also recommended construction of a magazine within the structure, but he provided no direction regarding size or location of this facility.[9]

The Federals initially made little attempt to enact Barnard's improvements; but dormancy abruptly ended following the Confederate victory at the Second Battle of Winchester (June 13-15, 1863), and the subsequent Rebel advance north through Maryland into Pennsylvania prompted immediate action.

Facing the threat of Confederate attack, the Union garrison at Harpers Ferry worked furiously to upgrade its incomplete defenses. From June 16-27, 1863, Col. William F. Raynolds--who had accompanied General Barnard during his springtime inspection--superintended the fortifications improvements, generally following the recommendations of Barnard. Regarding the Stone Fort, Raynolds noted that "temporary banquettes" had been placed in that position "so as to use it as a citadel, from which to drive out the enemy," should the Confederates gain possession of the crest north of the fort. Raynolds made no mention of the location of the banquettes nor the material used to construct them.[10]

Most revealing is Raynolds' notation of the Stone Fort's measurements. Raynolds describes the dry-masonry structure as "100 by 40 feet, with two square bastions, the wall being from 4 1/2 to 7 feet in thickness."[11]

Although similar to Lieutenant Suter's 1862 design, the Stone Fort described by Raynolds is only two-thirds the length of Suter's original conception. The east and west walls in Suter's plan measured 156 ft and

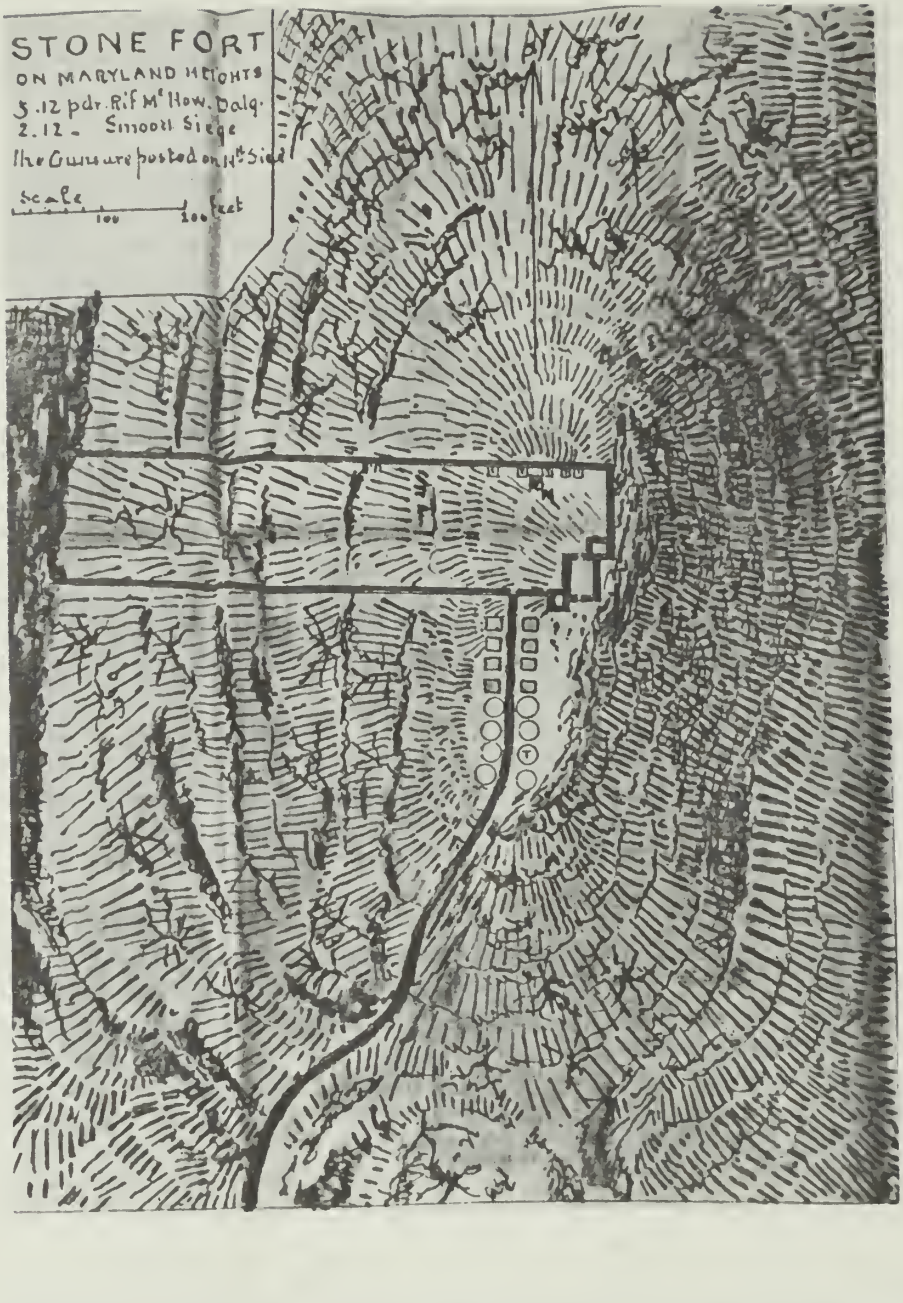

STONE FORT
ON MARYLAND HEIGHTS
5.12 pdr. Rif Mt How. Dalq.
2.12 - Smooth Siege
The Guns are posted on Nth Side
Scale
100
200 feet

Figure 5.2 Stone Fort Area Plan, by George Kaiser, January, 1863. North toward top of map. (National Archives)

GENERAL JOHN G. BARNARD'S

PLAN OF STONE FORT

MAY 5, 1863

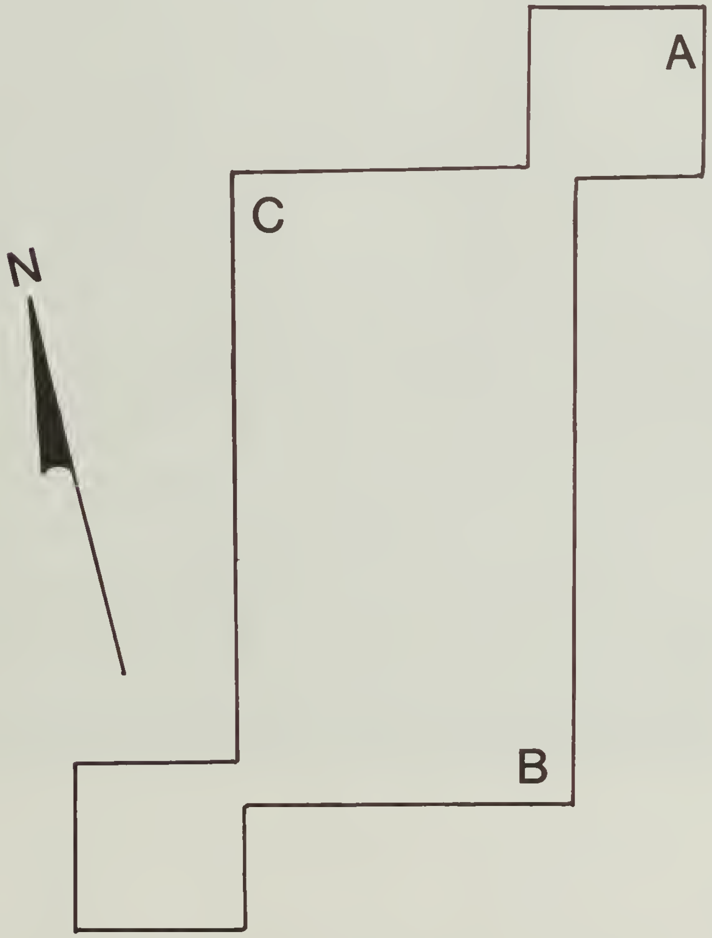


Figure 5.3

152 ft respectively. Raynolds' description lists both these walls at 100 ft in length. Variation in design between the north and south walls is not as pronounced. Suter's sketch labelled these sides at 44 ft; Raynolds states both north and south walls are 40 ft in length. Raynolds unfortunately provides no dimensions on the northeast and southwest bastions, but his 4 1/2-ft wall thickness matches Suter's measurement for the west wall of the structure.[12]

Colonel Raynolds' report of August 11, 1863, is the last to discuss the Stone Fort in terms of an actual position of defense. Correspondence to Harpers Ferry division commander Henry H. Lockwood on September 29, 1863, suggests the fort's conversion to a commissary storage area: "[T]he rations stored in the stone fort," reported inspector M.R. Mussey to Brig. Gen. Lockwood, "are not sufficiently protected from the changes of the weather." Mussey declared with some disgust that boxes of meat and hard bread had already spoiled because the "boxes are piled upon poles (not exceeding five inches in diameter) laid upon the ground, and are imperfectly covered," thus allowing moisture from storms and fogs to penetrate and damage the food.[13]

To correct the problem of mildew, rot, and mold caused by this moisture, Mussey recommended that a "platform be constructed 2 ft. from the ground to prevent the moisture from ascending & a wooden covering and sides be added [to the fort] to prevent the descending wet from reaching the enclosure."[14]

Although no known documents indicate when this platform and covering were erected, evidence suggests they were constructed. For example, an inspection report dated April 27, 1864, by Brig. Gen. Max Weber (then commanding at Harpers Ferry), describes the Stone Fort as "surrounded with a wall of solid stone, containing rations for five thousand men, [and] only covered with boards."[15] Additional evidence of the Stone Fort as a commissary exists in the postwar inspection report of Brig. Gen. Edward D. Ramsey. Ramsey states the fort consists of a "high stone wall, enclosing store houses adequate for a large supply of provisions."[16]

Unfortunately, no known illustrations or photographs reveal the visual appearance of the Stone Fort during the war. The recent discovery, however, of a circa 1870-1876 stereograph does provide a detailed view of the exterior of the western side of the structure (Figure 5.4).[17]

The William Chase stereograph has the camera facing east-southeast, and due to its lower elevation within the Interior Fort, the lens tilts slightly upward. The view reveals a substantial, well-constructed vertical wall with precise angles and a linear surface comprised of large capping stones. The west and north walls of the main fort (the 100 ft by 40 ft rectangle) dominate the center of the image. At the far left is the west wall of the northwest bastion; at the extreme right stands the north wall of the southwest bastion. Nowhere are dimensions of the stone uniform, and arrangement (by size of the stone) follows no apparent pattern. Large rounded boulders intertwine with small, handsomely-shaped rectangular stones; and as they interlock together, they form a faced wall which demonstrates the skill of its original builders.

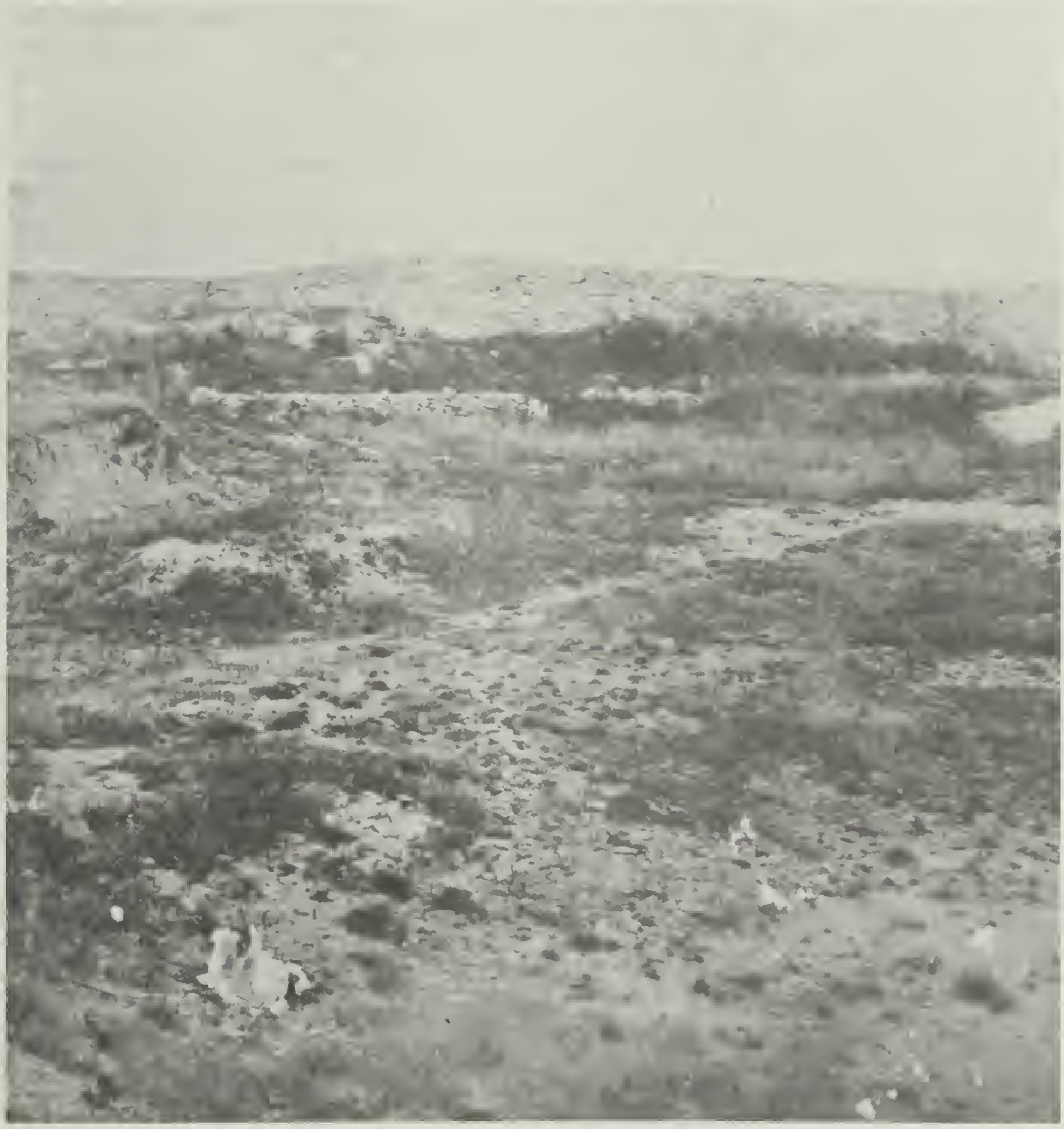


Figure 5.4 Chase Stereograph of Stone Fort/Interior Fort, dating from early 1870's. (Harpers Ferry NHP)

Several features within the structure attract particular attention. At left center of the photograph, large rectangular cut stones dominate the juncture of the west and north walls of the main fort. A distinct vertical break exists at the right of the illustration, emphasizing the intersection of the west wall of the main fort and the north wall of the southwest bastion. Although not in sharp focus, the far right of the picture shows a horizontal line running just above and parallel to the surface of the north wall of the southwest bastion. This, perhaps, represents remains of the wooden platforms and roofing constructed for the storage of commissary supplies. Moving to the left side of the image, a vertical break appears at the juncture of the north wall of the main fort and the west wall of the northwest bastion. At the extreme far left, the wall appears to angle away from the photographer. This, no doubt, represents the beginning of the north wall of the northwest bastion. Large, nicely dressed rectangular capping stones present a uniform surface along this western exposure of the Stone Fort.

Unfortunately, no individuals appear within the Chase stereograph to provide a sense of scale. As a result, wall height and length are difficult to determine; and the size and weight of individual stones within the wall falls purely to conjecture.

Despite this shortcoming, the Chase stereograph provides an excellent view of the Stone Fort before man and nature conspired to reduce the structure into ruins.

Interior Fort & Exterior Fort

When engineer Cyrus Comstock proposed a line of stone blockhouses and redoubts along the crest of Maryland Heights in mid-October, 1862, he also recommended that "all plateaus or gentle slopes between the crest and Harpers Ferry be held or so covered."[18]

Immediately west of the Stone Fort lies a narrow plateau, flanked on its west edge by a precipitous and rocky slope. Comstock does not specifically identify this position in his notebook, but his referral to the necessity to defend plateaus and slopes suggests the purpose and origin of the Interior and Exterior Forts.

Documentary evidence indicates these fortifications evolved over time. The precise date of initial construction remains unknown, but John Wilson's monthly returns for the winter of 1862-1863 (November through February) suggests activity at these sites during this period. Although Wilson does not specifically list the Interior or Exterior Forts as projects, returns for January and February report laborers "working on entrenchments." Since Wilson discusses projects in very general terms--never defining precise locations of work (with the exception of the stone blockhouse or Stone Fort)--it is probable, but not necessarily certain, that some of his 142 soldier-laborers were toiling on entrenchments which later comprised the Interior and Exterior Forts.[19]

The George Kaiser map of January, 1863, provides the first tangible evidence of defenses at the sites of the Interior and Exterior Forts.[20] Under an enlarged illustration entitled "Stone Fort," Kaiser presents two parallel lines extending west from the Stone Fort (see Figure 5.2).

According to Kaiser's crude scale (necessitating the following measurements as approximations), the southern line stretches 560 ft from its juncture with the north wall of the southwest bastion of the Stone Fort. The northern line, which lies 150 ft north of its parallel counterpart, runs 620 ft. The western terminus of both lines occurs in a heavily shaded area which apparently represents a steep bluff. The eastern terminus of the northern line forms a right angle with an 80 ft line extending from the east wall of the northeast bastion of the Stone Fort. In sum, the entire fortification forms a rectangle, with the Stone Fort anchoring the southeast corner and a steep bluff defining the fortification's western limits. Nothing on the Kaiser map refers to this area as the "Interior Fort" or the "Exterior Fort."

Abutting the south side of the northern line are five small squares. Careful examination reveals that each square contains the symbol representing an artillery piece (=-). Each square thus represents a gun platform. In engineer Wilson's returns for February, 1863, he specifically states his soldier-carpenters are "working on revetments and platforms."[21]

Centered behind the five platforms is a small square with the letter "M" posted beside it. This, no doubt, represents a powder magazine. Wilson's returns show carpenters working on magazines from November, 1862, through January, 1863.[22] The Kaiser map shows no other magazines within this fortification. In fact, during General Barnard's inspection in late April, 1863, he identified only one magazine "outside the citadel" [Stone Fort], and recommended that it "have its doorway corrected or protected."[23]

The Kaiser map reveals only one entrance into this fortification--a passage through the southern line approximately 40 ft west of the southwest bastion of the Stone Fort. A road which runs north along the crest terminates at this entrance.

Brig. Gen. John G. Barnard provides the first physical description of this fortification in his May 5, 1863, inspection memorandum. Barnard identifies the work as a "double line of rifle-pits," and he divides the position into two topographic sectors: (1) "the highest part," or that section of the line on the flat plain just west of the Stone Fort (this later becomes known as the Interior Fort); and (2) "the extension of the pits to the left," or that section of the line descending down the western slope of the mountain (the Exterior Fort).[24]

To improve the defensibility of the rifle-pits on "the highest part," Barnard recommends conversion of this space into a "fort" by raising the existing parapet and constructing a ditch. Barnard provides no details on the height of the new parapet or the depth and width of the ditch. He does suggest, however, placement of a howitzer "in the northwest angle of this work" to flank the ground north of the Exterior Fort lines. The general also recommends planting a 30-pounder Parrott along the west face of the fort to "command the plain between the mountain and the Potomac."[25]

Barnard offered few improvements for the rifle-pits comprising the Exterior Fort. In fact, he insisted only that the pits extend to ground "so impracticable" that the position could not be turned. To help guarantee this result, Barnard requested that positions be prepared for one or two howitzers which could help sweep the western side of the mountain.[26]

Apparently few of Barnard's suggestions initially became reality, for a June 15 inspection by Brig. Gen. Daniel Tyler (commanding the defenses of Harpers Ferry) produced an irate reaction: "[T]he defenses on the Maryland side had been sadly neglected," wrote Tyler. A couple of good enemy regiments approaching the heights from the north, he proclaimed, could "by a sudden and determined attack, carry the battery [just north of the Stone Fort] and consequently control the entire position."[27]

To rectify these inadequate defenses, especially in the face of a looming Confederate invasion, Tyler requested the assistance of an engineer. At 11 p.m. on June 15, Col. William F. Raynolds, chief engineer of the 8th Corps, arrived at Harpers Ferry, and he immediately began implementing Barnard's suggestions.

Upon arrival at the Stone Fort, Raynolds observed that the rifle-pits north of the Fort were being used as a parapet for seven light guns (mostly howitzers, hence the name "Howitzer Battery"). As suggested by Barnard, Raynolds improved the defensibility of this position by raising, by nine or ten feet, 100 yards of the parapet of the northern rifle-pits on the plain just below the Stone Fort. He also instructed workers to mount the howitzers behind this position in embrasure rather than en barbette. Raynolds made no mention of construction of a ditch; listed no improvements on the southern line of rifle-pits; and offered no comment on enhancing the double line of pits which extended down the west slope.[28]

Raynolds filed his report on August 11, 1863. No subsequent documents detailing further improvements at the Interior or Exterior Forts have been discovered.

Interesting, as well, is the fact that Barnard and Raynolds consistently referred to the northern and southern lines of the Interior and Exterior Forts as "rifle-pits." Never are these lines described as entrenchments or earthworks or breastworks.

The topographic map compiled by Capt. Nathaniel Michler in August and September, 1863, provides several additional details relevant to the Interior-Exterior Fort area (Figure 5.5). Michler shows two lines running west from the Stone Fort and angling slightly northward; but unlike in the Kaiser map of January, 1863, the lines are not parallel (Figure 5.2). Perhaps this stems from a suggestion by General Barnard in May, 1863. Barnard recommended that "the extension of the pits to the left [down slope

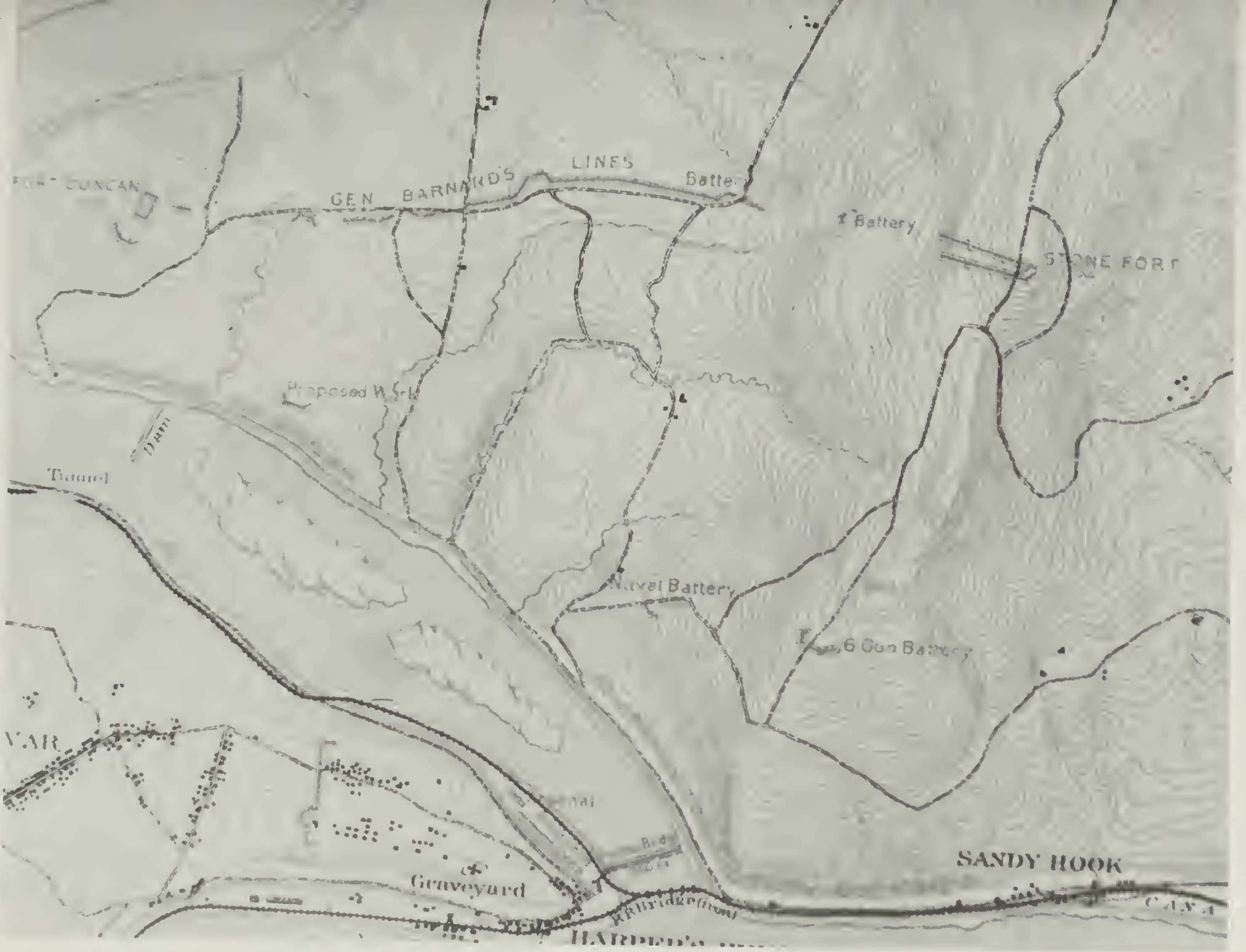

DUNCAN
GEN BARNARD'S LINES
Batte.
Battery
STONE FORT
Proposed W.S.R.
Dam
Tunnel
Naval Battery
6 Gun Battery
Canal
Bridge
Graveyard
R.R.Bridge (Iron)
SANDY HOOK
HARPER'S
CANA
VAR

Figure 5.5 Defenses on Maryland Heights by Nathaniel Michler, August-September, 1863. (From _Official Military Atlas_, Plate 42.1)

from the Interior Fort] should have been somewhat retired, so as to be thoroughly flanked by the [Interior] fort."[29] Perhaps Colonel Raynolds adopted this suggestion of "retiring" the lines while making improvements at the Interior Fort from June 15-27, 1863.

Another difference between the Kaiser and Michler maps is the location of the northeast terminus of the northern line of the Interior-Exterior Forts. Michler shows this line connecting with the northeast bastion of the Stone Fort; on Kaiser's map, the line runs approximately 80 ft north of the Stone Fort's northeast bastion. The 1865 John Donn map also illustrates the northern line of the Interior-Exterior Forts well north of the Stone Fort (Figure 5.6).

Like the Kaiser map, the Michler map shows a road entering the southern line of the Interior Fort west of the Stone Fort. In the Michler map, however, the road does not terminate at the south wall as in the Kaiser illustration. Instead, Michler shows the road passing into the fort, exiting through its northern line, and continuing north along Elk Ridge toward Solomon's Gap.

Although the Michler map shows both the northern and southern defenses of the Interior-Exterior Forts in some detail--both are presented as bold, thick lines flanked by light, narrow lines--Michler shows no line representing the west wall of the Interior Fort. In fact, only the 1865 Donn map reveals a line distinctly dividing the Interior and Exterior Forts. The precise date of construction of the Interior Fort's west wall remains unknown.

During his postwar inspection of the Maryland Heights defenses in July, 1865, General Ramsay gives no description of the northern and southern lines comprising the Interior-Exterior Forts. Ramsay does mention, however, "three excellent magazines" within the Interior Fort, with a "spring of pure and cold water" in the vestibule of one of these magazines. In reference to the condition of these fortifications, Ramsay declares: "I have seen no field works better kept and preserved."[30]

Unfortunately, the Chase postwar stereograph shows none of the field fortifications Ramsey apparently admired (see Figure 5.4). Although the camera stands near the northwest corner of the Interior Fort, the photographer's attention focuses primarily upon the Stone Fort, and as a result, only a few features within the Interior Fort are captured within the picture. Most apparent is a low-lying, ill-defined stone wall located just below the northwest corner of the Stone Fort. No clues regarding the original design nor purpose of this structure are evident. Just to the left of this wall, and on the far left of the stereograph, appears a mound of earth with sloping, eroding sides. This is the powder magazine located just south of the north parapet of the Interior Fort and identified on the January, 1863, Kaiser map. The earthen walls of a second magazine, located west of the western wall of the Stone Fort, also appears in the stereograph. Since no verbal descriptions exist for any of the magazines on Maryland Heights, this photograph provides the only evidence of the appearance of two of these structures. The stoneless, almost barren foreground reveals nature slowly recouping a mountain crest trampled by three years of military occupation.

Stone Breastworks East & South of the Stone Fort

During his inspection of the Maryland Heights defenses in late April, 1863, General Barnard observed that the eastern side of the mountain between the Stone Fort and the 30-pounder battery seemed very susceptible to attack.[31]

To help insure against this possibility, Barnard urged the construction of rifle-pits along the margin of the plateau just below and east of the Stone Fort. Barnard also suggested that all timber on the eastern slope of the mountain be cut. "With the timber felled and kept on the ground," Barnard reasoned, "a very few men could defend this flank." Barnard further bolstered defenses along the eastern slope by recommending the distribution of "a half dozen disposable howitzers" along the Maryland Heights ridge top.[32]

These suggestions became reality in mid-June, 1863, with the arrival of Colonel Raynolds. Raynolds described the eastern face of Maryland Heights as "very steep and difficult," thus providing the enemy with "the least facility for the approach." Nevertheless, to enhance this strong natural barrier, Raynolds ordered the construction of "stone breastworks or rifle-pits" along the eastern flank of the mountain. Raynolds further strengthened this line by distributing seven light field guns to points "from which they have a raking fire on the mountain side." In addition, Raynolds employed 600 axmen to cut timber on the eastern slope. With these arrangements complete, the eastern flank of Maryland Heights became virtually inaccessible.[33]

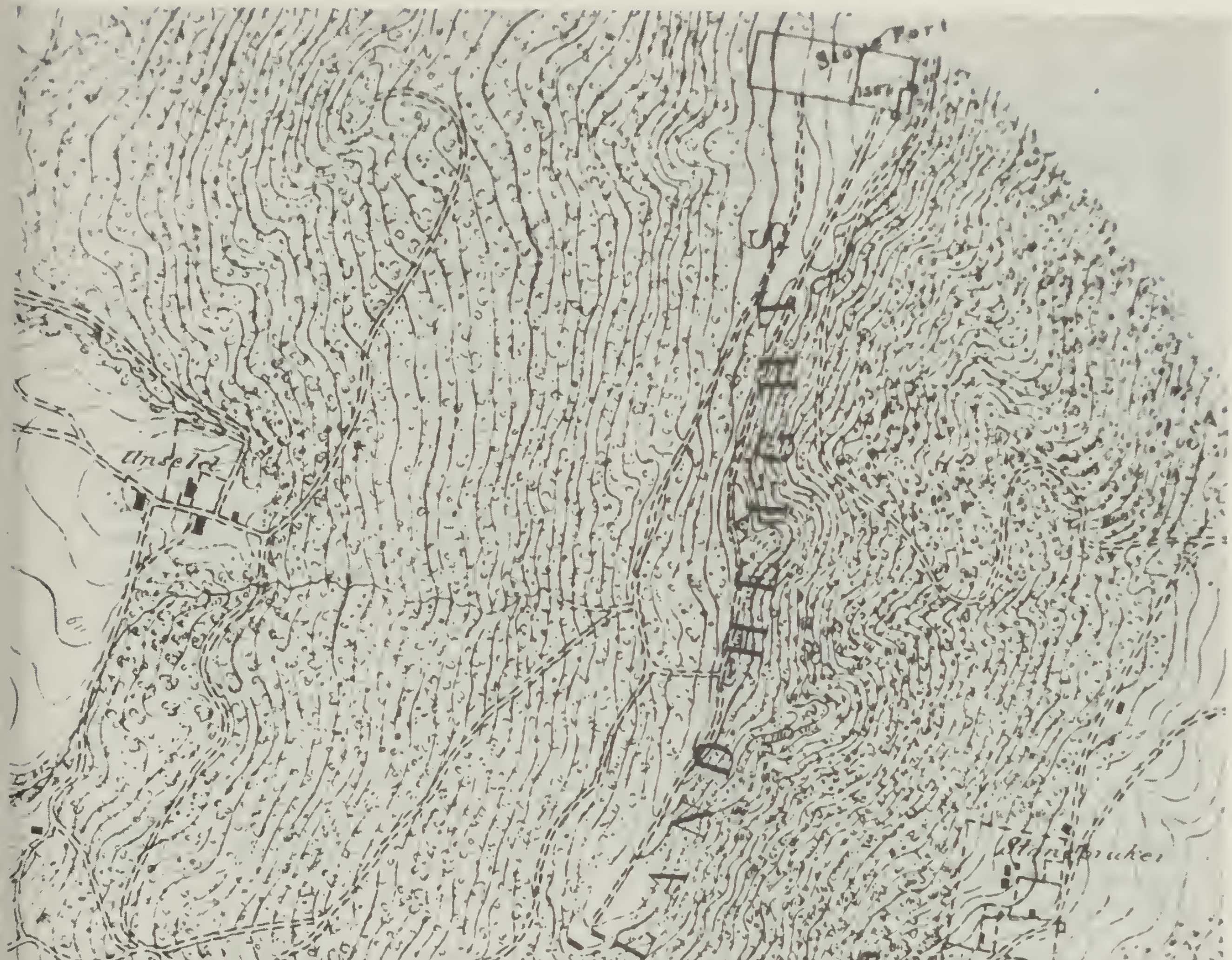
None of the Civil War maps of Maryland Heights show this line of stone breastworks along the mountain's eastern flank. With the exception of the Barnard and Raynolds reports, no other documents mention these defenses.

100-pounder Battery

During the joint inspection of General Barnard and Colonel Raynolds in late April, 1863, Barnard recommended that a gun be placed at a high point on the crest, "surrounded by a wall of sandbags, and arranged to fire not only at Loudoun Heights but into either of the valleys east and west of Maryland Heights."[34]

First mention of this battery by name appears in Colonel Raynolds' report for June 15-27, 1863. Upon a newly constructed platform on a narrow point of the crest (approximately 600 yards south of the Stone Fort), Raynolds had mounted a 100-pounder Dahlgren gun recently removed from the Naval Battery. The gun's field of fire was 360 degrees, and as Raynolds surmised: "It can

Figure 5.6 Defenses on Maryland Heights by John Donn, 1865. North toward top of map. (Harpers Ferry NHP)


Stone Fort
Unseld
MARYLAND HEIGHTS
Stonebraker
Elgin

be used with effect against an enemy ascending either slope of the mountain in Pleasant Valley, on Loudoun or Bolivar Heights, or on Fort Duncan, and a single shot from it would render the stone fort untenable." As Raynolds concluded, the 100-pounder gun "is the key to the position."[35]

Although Raynolds gives no date for the placement of this 9,700-pound tube upon the crest, Pvt. Daniel H. Mowen of the 7th Maryland Infantry states the move occurred on June 23, 1863.[36] Maj. Frank A. Rolfe and members of his 1st Massachusetts Heavy Artillery superintended the transfer of this gun from the Naval Battery to the crest, but unfortunately, no accounts of this operation have been discovered.[37] The task no doubt proved herculean, for nearly 800 vertical feet and one mile of rugged road stands between the Naval Battery and the 100-pounder position.

When the Federals evacuated Maryland Heights on June 30, 1863, guns left behind were spiked. The 100-pounder Dahlgren apparently suffered a worse fate; for when the Northerners reoccupied the position during the second week of July, 1863, William Lincoln of the 34th Massachusetts Infantry recalled the 100-pounder toppled from its carriage and lying on the side of the mountain.[38] Col. P.A. Porter of the 8th New York Heavy Artillery reported on July 21, 1863, that his men were raising this 9-inch Dahlgren "thrown down the steep" and returning it to its former position upon the crest.[39]

By mid-August, 1863, the Federals had replaced the Dahlgren with a 100-pounder rifled Parrott gun. Again, no details are available on how Major Rolfe accomplished this task. The regimental history of the 1st Massachusetts Heavy Artillery simply states that from "200-500 men were required to haul one of these guns up the mountain."[40]

No documents indicate specifically when the powder magazines at the 100-pounder position were constructed. Raynolds made no mention of the magazines in his report. Rolfe boasted his heavy artillery battalion constructed 12 magazines from June 16-June 27, but he failed to denote locations.[41]

The 100-pounder Parrott certainly impressed General Ramsey during his postwar inspection in July, 1865. Ramsey referred to the gun as "conspicuously mounted on centre pintle carriage" with an "unlimited field of fire." Ramsey explained the weapon had proved so accurate and effective that it had destroyed a stone schoolhouse four miles distant (probably the school on School House Ridge just west of Bolivar Heights). Ramsey, too, failed to learn how Rolfe and his men transported this heavy gun to the crest of the mountain. "I regret I could not obtain the details," Ramsey wrote. The general made no mention of the magazines at this position, but he did observe that "the gun and carriage bear no marks whatever of rough usage, and are both in perfect condition."[42]

Mortar Battery

The origin of this battery remains largely unknown. Neither Barnard nor Raynolds make any mention of a "mortar battery" in their respective reports covering May and June, 1863.

Colonel Porter of the 8th New York Heavy Artillery makes no mention of mortars in his July 21, 1863, letter to Brig. Gen. William F. Barry. Porter lists the guns on the mountain and even places them at specific locations on his crudely drawn map; but at no point does Porter show any mortars.[44] Even the detailed Michler map, produced in August and September, 1863, fails to identify or show a mortar battery.

The Mortar Battery unquestionably existed by November 30, 1863; for the records of Company K, 5th New York Heavy Artillery, reveal this company relieving a detachment of the 1st Massachusetts Heavy Artillery at this position on November's final day.[45]

No documents have revealed any clues regarding the decision to place mortars at this position. No evidence currently unveils construction dates for the parapet or magazine at this location. There is no doubt, however, that this position is the Mortar Battery; for a crude, undated, wartime map in the Edwin M. Stanton collection in the Library of Congress identifies this position as the Mortar Battery (Figure 5.7). In addition, guard regulations issued for Company K, 5th New York Heavy Artillery, on October 31, 1864, specifically outline guard patrols and procedures for the Mortar Battery. One instruction, in fact, shows the guard's beat extending "from the brow of the hill on the right of the battery to the second mortar."[46]

The postwar 1865 map by John Donn (Figure 5.6) provides evidence of structures or fortifications at the Mortar Battery. Donn shows two rectangles--each with its longest side facing southwest toward Harpers Ferry--at the termination of a road leading down the crest of the mountain from the Stone Fort to the Mortar Battery position. Donn does not label this site as the Mortar Battery, but he identifies no position by name with the exception of the Stone Fort.

Little evidence exists regarding the type and number of mortars at this position. A July 6, 1864, manpower request by Maj. Frank Merriam asks that 50 men be ordered to the 50-pounder mortar on top of Maryland Heights. With this exception, no other document mentions the specific armament at this battery.[47]

General Ramsay's July, 1865, inspection also fails to note the existence of the Mortar Battery. In his discussion of the 30-pounder Battery, however, Ramsay's armament list includes two 24-pounder Coehorn mortars and two 10-inch siege mortars. Perhaps the Mortar Battery had been dismantled by the time of Ramsay's inspection, and the weapons removed to the nearby 30-pounder Battery. Then again, due to the proximity of the two batteries, Ramsay may have purposely included the Mortar Battery as part of the 30-pounder position.[48]

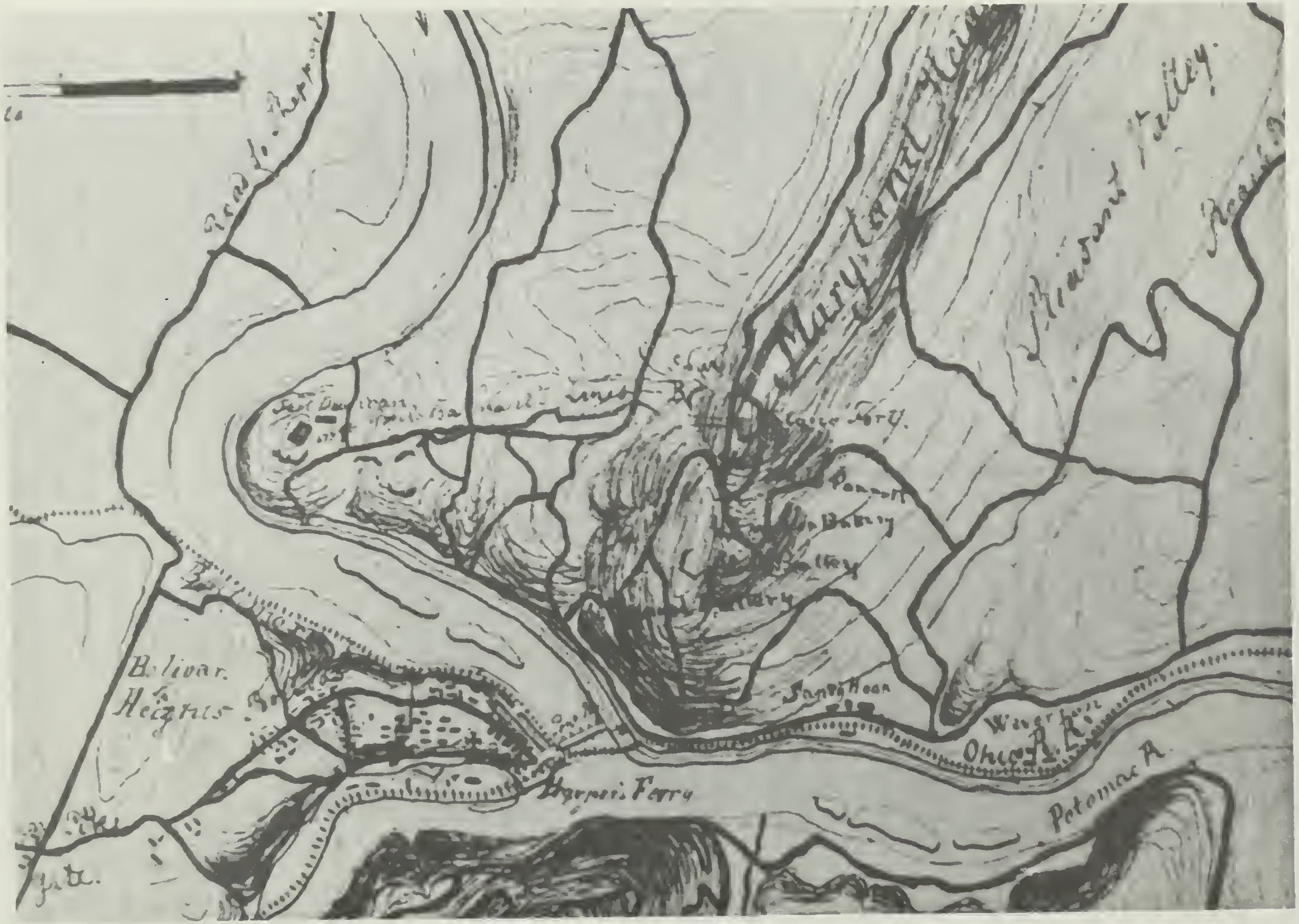

Road to
Maryland Heights
Pleasant Valley
Road to
Bolivar Heights
Harper's Ferry
Sandy Hook
Weverton
Ohio R.R.
Potomac R.

Figure 5.7 Detail of map showing defenses on Maryland Heights by unidentified cartographer. (Edwin M.Stanton Collection, Library of Congress)

30-pounder Battery (Six-Gun Battery)

This fortification likely represents the first earthen battery constructed upon Maryland Heights.

Evidence supporting this claim comes through careful examination of the William Luce map of October, 1862 (Figure 5.8). A bold "J" shaped line symbolizing a fortification appears on the map at the site later known as the 30-pounder Battery. No similar symbols appear elsewhere on the mountain, not even at the older Naval Battery. Luce's map therefore suggests construction is underway at the 30-pounder Battery before the close of October, 1862.

Unfortunately, the returns submitted by Lt. John M. Wilson for November, 1862, through February, 1863, provide no specific information on construction at the 30-pounder Battery. The Kaiser map of January, 1863, is the first to present a plethora of important details (Figure 5.9).

Under the heading of "Second Battery on Maryland Heights," Kaiser illustrates a four-sided earthwork comprised of two long mid-sections and two shorter flanks. Although Kaiser's crude scale makes measurements difficult to determine, the right (east) flank of the battery appears nearly double the length of its western counterpart. Both mid-section lines are approximately the same length (about 130 ft. each, according to Kaiser's scale).

The fortification generally faces south, and its rear or north end appears open. A bold, angled line represents the rampart, and it is paralleled in its entirety by a narrow line defining the outside boundary of a ditch. Near the center of the fortification, a passage breaks the rampart and a ramp spans the ditch. A road terminates at the southern end of the ramp.

A rectangular, unidentified structure confronts the north entrance of the passage through the rampart. Just behind (or north) of this rectangle is a shaded block with the letter "M" (magazine) inscribed within its borders. A second magazine appears to the right, aligning behind the east flank of the rampart.

Kaiser shows five gun platforms abutted against the north side of the rampart. Two of the guns are posted on the mid-section just left (west) of the passage through the rampart; one gun stands on the mid-section to the right of the passage; another at the angle between the right mid-section and the rampart's east flank; and one behind the eastern flank of the fortification. In his caption, Kaiser identifies the guns as four 30-pounders and one 24-pounder "Smooth Siege." Kaiser does not differentiate the gun locations within the fort, making it impossible to identify the 24-pounder's position.

Within General Barnard's inspection memorandum of May 5, 1863, he identifies this position as the "30-pounder battery." This is the first time this particular usage appears in official documents.[49]

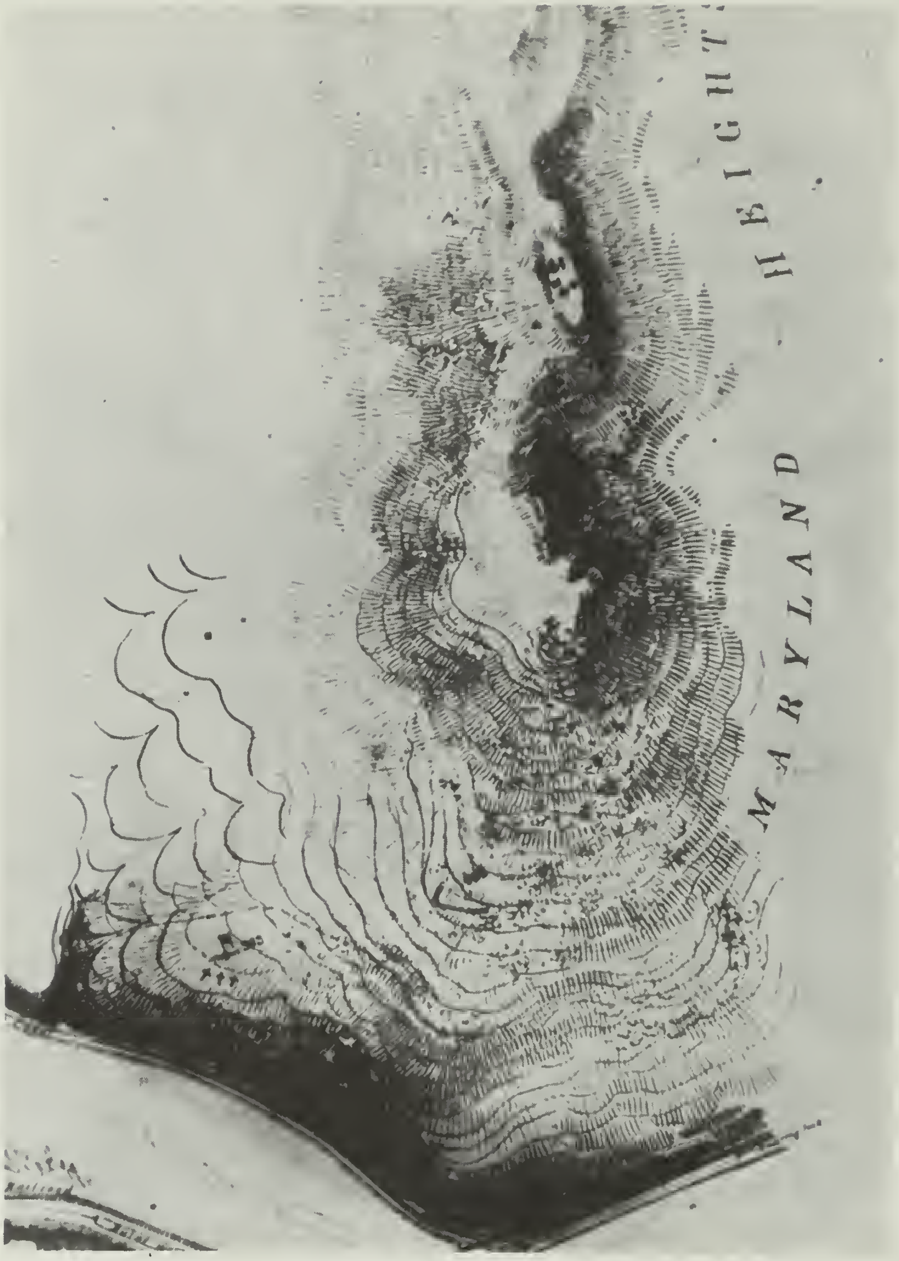

MARYLAND HEIGHT

Figure 5.8 Detail of map showing defenses on Maryland Heights, by William Luce, October, 1862. North toward top left corner of map. (Harpers Ferry NHP)

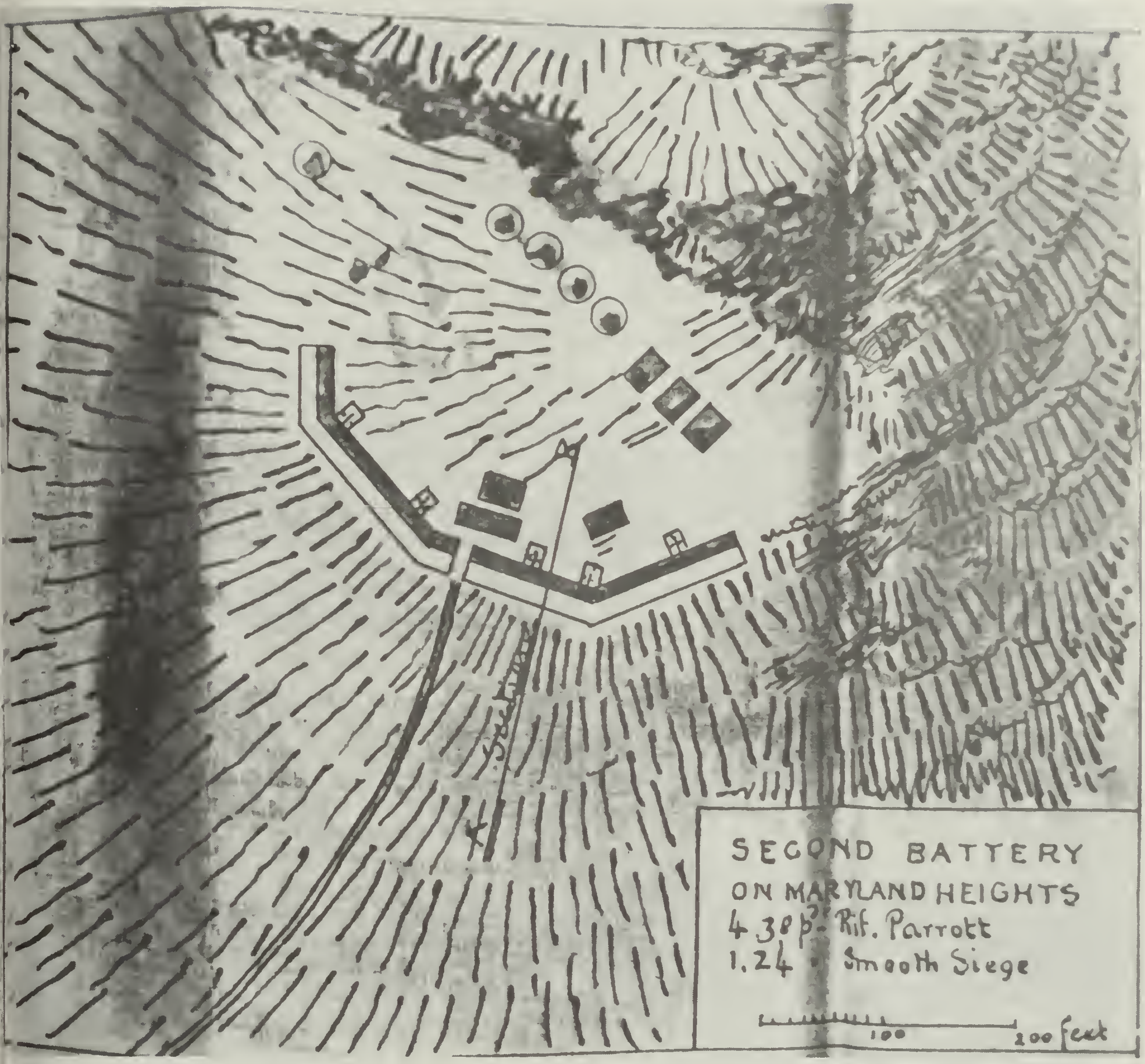

SECOND BATTERY
ON MARYLAND HEIGHTS
4 30 pdr. Rif. Parrott
1. 24 " Smooth Siege
100
200 feet

Figure 5.9 30-pounder Battery Plan, by George Kaiser, January, 1863. North toward top of map. (National Archives)

Unlike at other Maryland Heights' fortifications--where Barnard had urged major improvements--the general proclaimed the 30-pounder Battery "well located"; and with the exception of labelling the 24-pounder siege gun in this battery as "useless," Barnard offered no recommendations other than to change the doorways on the magazines to insure proper covering.[50]

Raynolds termed the 30-pounder Battery "well-constructed," stating its guns "commanded perfectly the summit of Loudoun Heights as well as Bolivar Heights." The colonel listed the armament for the June 16-27 period as six 30-pounder Parrotts and two 24-pounder guns. This represents the first reference to "six 30-pounders" within this battery. Raynolds quickly reduced this number to five when he ordered one of the Parrotts removed to a position at the Interior Fort.[51]

The first time the term "Six-Gun Battery" appears is on the Michler map of August-September, 1863 (see Figure 5.5). With this one exception, all other official documents, beginning in May, 1863, consistently refer to this position as the "30-pounder battery."

The configuration of the battery on the Michler map (Figure 5.5) appears nearly identical to Kaiser's January, 1863, illustration (Figure 5.9). In fact, both Kaiser and Michler duplicate the general design of this battery as first presented by William Luce on his October, 1862, map (Figure 5.8). John Donn's 1865 postwar map shows little variation from previous designs (Figure 5.6).

Both Donn and Kaiser exhibit two structures within the battery. Both plans show a feature immediately north of the juncture of the right and left midsections of the battery. In the Kaiser drawing, a second, smaller structure stands north of the feature nearest the rampart. Donn, conversely, shows his second, larger structure at the center-rear of the battery.

General Ramsay takes little notice of this battery in his postwar inspection report. He lists the armament within the fort--including four 30-pounder Parrotts--and states the powder within the two magazines is well preserved.[52]

Spur Battery

The rolling plain wedged between the Potomac River and the western base of Maryland Heights presented an excellent avenue from the north for enemy attack. To help make this approach inaccessible to the Confederates, Barnard envisioned an earthen battery on the plateau, or "mountain spur," located half way up the west side of Maryland Heights.[53]

During the June 16-27, 1863, improvements of the Maryland Heights' defenses, Colonel Raynolds removed a 50-pounder Dahlgren gun from the Naval Battery and had it placed in position on the "mountain spur" identified by General Barnard. From this point, Raynolds claimed, the 50-pounder could sweep the western slope of Maryland Heights and enfilade a ravine slicing east-west across the plain. If necessary, in fact, the 50-pounder could be turned around and faced south for use against intruders on Bolivar Heights.[54]

Raynolds mentioned nothing about erecting an earthen battery or magazine at this position; but he did order construction of a line of stone breastworks along the northern edge of the "mountain spur." The Federals built this line of "rifle pits" by filling a crib work of logs with stone. According to Raynolds, these breastworks, in connection with the Exterior Fort lines extending down from the summit, rendered the west slope of Maryland Heights "safe against almost any attack."[55]

Although not specifically named, the Spur Battery appears on Michler's map in the configuration of an extremely small defensive work (see Figure 5.5). In fact, no other battery appears smaller. The line of breastworks running up slope (east) toward the Exterior Fort are not presented on the Michler illustration. The postwar 1865 Donn map also provides no details of this battery (Figure 5.6). Donn shows a road leading to the site of the Spur Battery, but no symbols denote the battery's former existence nor the line of breastworks emanating from this position.

No additional documentary evidence discusses the physical appearance or later changes at the Spur Battery.

Naval Battery

This battery, located approximately 400 feet above the Potomac River on the southwest slope of the mountain, represents the first permanent Federal occupation of Maryland Heights.

Following the Union defeat at the First Battle of Winchester on May 25, 1862, the Federals fled north down the Valley Pike with Maj. Gen. Thomas J. "Stonewall" Jackson's Confederates in hot pursuit. Concerned that Jackson would attack Harpers Ferry next, Union authorities rushed reinforcements from Washington to bolster the Harpers Ferry garrison. This relief included a heavy battery of naval guns from the Washington Navy Yard.[56]

This naval detachment, under the command of Lts. C.S. Daniels and Ulric Dahlgren, arrived at Harpers Ferry late on the evening of May 26. By late morning of the next day, Daniels reported one 9-inch Dahlgren gun in position upon Maryland Heights.[57]

This gun had "some splendid practice" shelling Loudoun Heights on May 28, prompting Brig. Gen. Rufus B. Saxton (commanding the Harpers Ferry position), to report: "I expect a great deal from the battery on the mountain, having their 9-inch Dahlgren bearing directly on the enemy's approaches."[58]

As observer David Hunter Strother noted on May 30, following his climb up a "steep and rocky road" to the Naval Battery, this position, manned by a detachment of about 300 sailors, "commands the town of Harpers Ferry and all its approaches. Its fire rakes the summit and side of Loudoun Heights, and sweeps the crest of Bolivar Heights most effectually."[59]

By the afternoon of May 30, a second Naval gun (either another 9-inch Dahlgren or a 50-pounder Dahlgren) had been planted at the Naval Battery, which also was referred to at this time as "Battery Stanton," in honor of Secretary of War Edwin M. Stanton. The battery witnessed little additional action, however, for the Confederate force threatening Harpers Ferry began withdrawing back up the valley during the night of May 30-31.[60]

The sailors and marines stationed at the Naval Battery returned to Washington on June 8, 1862, but they left behind their two 9-inch Dahlgrens and one 50-pounder gun.[61] Ten days later, Company F, 5th New York Heavy Artillery, under command of Capt. Eugene McGrath, arrived at Harpers Ferry to man the Naval Battery.[62]

Evidence suggests that these guns set upon a large platform--"a broad platform like a shipdeck"--according to one account.[63] An August, 1862, photograph showing the southwest slope of Maryland Heights further substantiates this platform concept (Figure 5.10). Under careful examination through magnification, the lower right of the bright clearing reveals a shaded line, where the natural slope has been sliced away, forming the north side of this platform. On the south edge of the platform is another dark line which looks like an earthen wall. This either is a compacted mound used to raise the down slope side of the platform, or a raised rampart for the guns. Even under the magnification, none of the naval guns are distinctly visible in the photograph.

Less than one month after an unknown photographer recorded this long-distance scene of Maryland Heights and the Naval Battery, Confederate forces under "Stonewall" Jackson invested Harpers Ferry. Seven guns comprised the Naval Battery in mid-September, 1862--the three large Dahlgren guns (each separated by one rod or 16.5 ft) and four 12-pounder light howitzers. According to Lt. Joseph H. Barker of Company F, 5th New York Heavy Artillery, the navy guns set on the right (east) side of the platform and the four 12-pounders were "well protected by breastworks toward the west." McGrath indicated these breastworks were built less than 12 hours before the siege commenced on the 13th.[64]

With the Confederates advancing south along the crest of Elk Ridge on September 13, Captain McGrath turned his naval guns around to face north. He then shelled the crest with his heavy guns until mid-afternoon of the 13th. About 3 p.m., the Federals received orders to abandon Maryland Heights and retreat into Harpers Ferry. As ordered, McGrath spiked the naval guns and toppled them from their carriages. The Federals left the 12-pounders behind, along with plenty of ammunition stored in three large Sibley tents.[65]

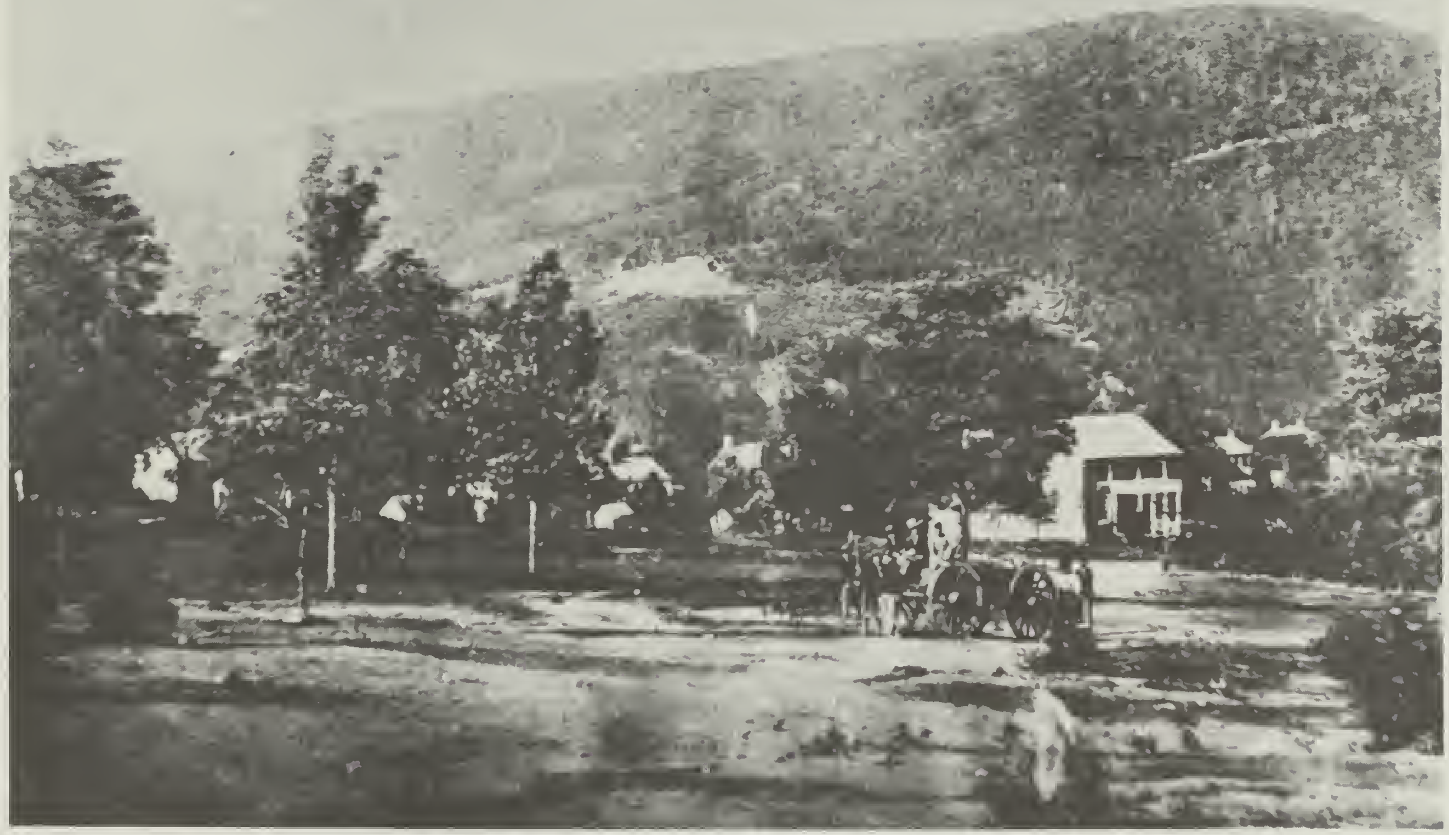


Figure 5.10 Naval Battery and southwest slope of Maryland
Heights from Camp Hill, August, 1862.
(Harpers Ferry NHP)

Five days after Jackson's capture of the Union garrison at Harpers Ferry on September 15, the Federal 12th Corps occupied Maryland Heights in strength. On September 24, 1862, Maj. Gen. George B. McClellan requested two companies of heavy artillery "to man the heavy guns on Maryland Heights." Three days later, Company H and Company I of the 1st Massachusetts Heavy Artillery arrived under Maj. Frank A. Rolfe.[66]

Remounting the spiked naval guns at the Naval Battery proved the first priority for the Bay State artillerymen. Rolfe's command recovered the guns "fifteen or twenty feet from their platforms"; and four days after arriving on Maryland Heights, the guns were reported "ready for action." With this task completed, Rolfe's men then constructed "four small magazines" at the Naval Battery.[67]

These magazines distinctly appear in the January, 1863, Kaiser map (Figure 5.11). Each is symbolized by a shaded square with the letter "M" inscribed within. By the measurements of Kaiser's crude scale, each magazine is 25-30 ft square, excluding the entrance. The entrance to each magazine is represented by an elongation of the square. Three of the magazines have their entrances at their southeast corners; the fourth, located toward the far right (east side) of the battery, has its entrance at its northwest corner. With the exception of this lone magazine toward the east, the other three align on a northeast to southwest axis, paralleling a road which delimits the north boundary of the battery.

Kaiser shows seven circular platforms spaced evenly at 70-80 ft intervals. As a whole, the arrangement is crescent shaped, with the right and left of the line turned slightly northward. Each platform abuts against a broad, dark line that no doubt represents the sandbags identified by Kaiser in the caption for this illustration. Lt. Col. Charles E. Phelps of the 7th Maryland Infantry substantiates the presence of sandbags when, on December 28, 1862, he describes the guns of the Naval Battery as "mounted in sandbag embrasures."[68]

Although the most prominent defensive position on Maryland Heights prior to Jackson's siege and capture of Harpers Ferry, the Naval Battery lost its significance with the completion of additional fortifications. Although it still commanded Bolivar Heights and the town of Harpers Ferry, and "imperfectly" protected the B & O Railroad bridge and the Potomac River shoreline, the mission of the Naval Battery fell upon other batteries at better locations. As General Barnard summarized in his May 5, 1863, inspection memorandum: "I attach very little importance to this battery at present."[69]

During the enhancement of the defenses in June, 1863, Colonel Raynolds removed a 9-inch Dahlgren from the battery to the summit, and he ordered a 50-pounder gun to the Spur Battery. When the Federals reoccupied the mountain in July, 1863, Colonel Porter reported one 9-inch Dahlgren, one 24-pounder gun, and one 24-pounder howitzer at the Naval Battery. No documents indicate when an earth rampart replaced the sandbags at this battery.[70]

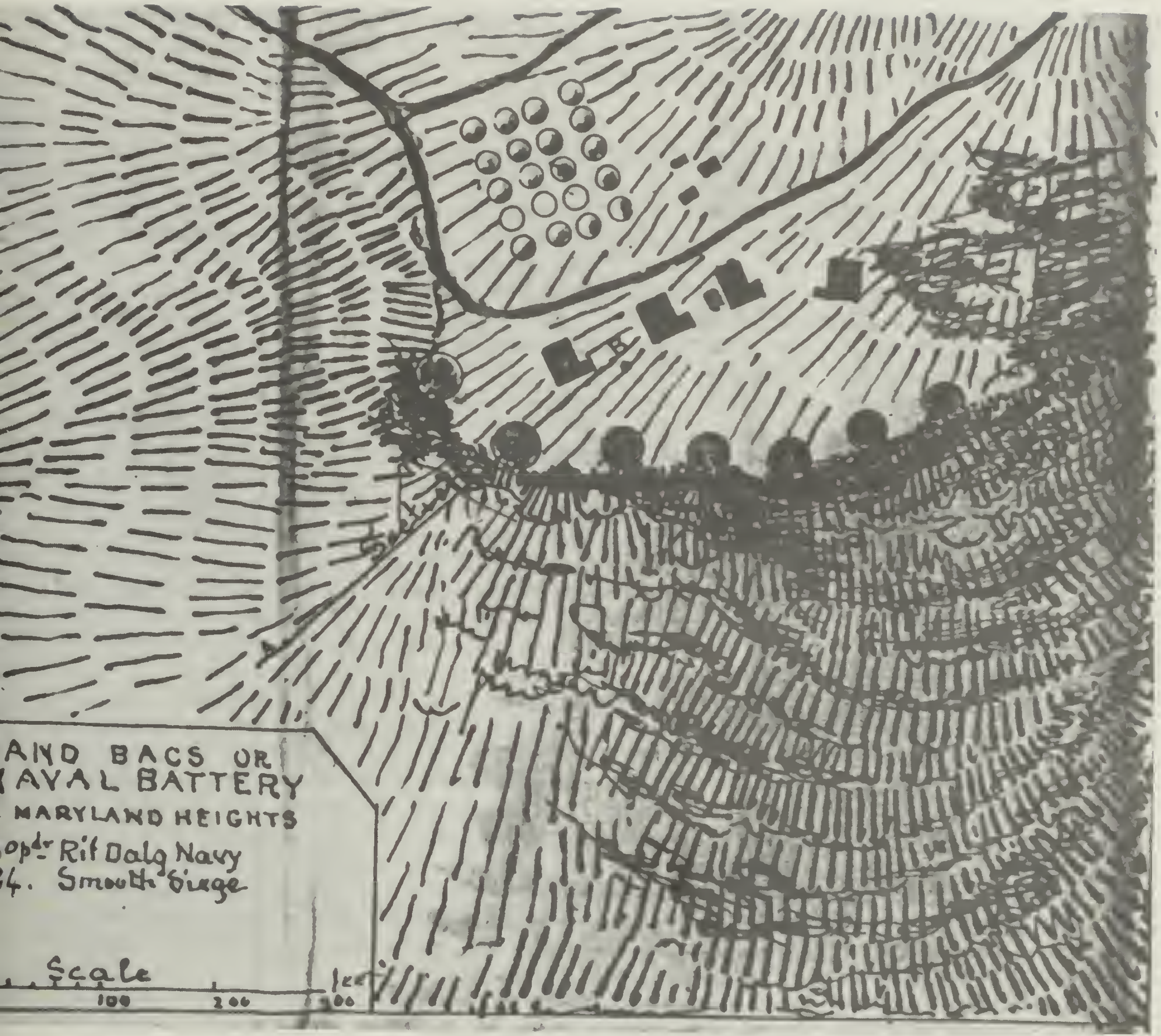

AND BACS OR
AVAL BATTERY
MARYLAND HEIGHTS
opdr Rif Dalg Navy
4. Smooth Siege
Scale
100
200
300

Figure 5.11 Naval Battery Plan, by George Kaiser, January, 1863. North toward top of map. (National Archives)

During the final year of the war, the Naval Battery served primarily as an ordnance depot. In fact, General Ramsey reports the battery dismantled in his July, 1865, postwar inspection; but he notes two ordnance magazines "full of ammunition, in excellent condition."[71] Ramsay does not reveal the date of the Naval Battery's dismantlement.

Fortifications Constructed During the Siege of September, 1862

On September 5, 1862, Col. Dixon S. Miles--commander of the Harpers Ferry garrison--assigned Col. Thomas H. Ford of the 32nd Ohio Infantry command of the Third Brigade, then stationed upon Maryland Heights.

When Ford arrived on the mountain on the evening of the 5th, he made "a strict examination of the situation of the defensive preparations, and found that no fortifications had been made." To correct this deficiency, the colonel first requested artillery and troops for the defense of Solomon's Gap, four miles north of Harpers Ferry on Elk Ridge. Colonel Miles rejected this suggestion, and also Ford's second option--planting artillery at a position on the crest known as the "Lookout." As Ford reported, "Being foiled in my efforts, I abandoned this project as a means of defense."[72]

Despite his frustrations to defend the crest with artillery, Ford did instruct Capt. John T. Whittier of Company F, 1st Maryland Potomac Home Brigade, to construct a breastworks atop the mountain. Whittier built the works on September 11.[73]

Ford described this defense as a "slight breastwork" located about one mile north of the Lookout. A soldier in the 126th New York Infantry labelled the fortification "a rude breastwork of logs, thrown across the ridge [perpendicular to the crest]." Col. James D. Nance, who led his 3rd South Carolina Infantry in an attack against the position on the 13th, described the Federal defense as a "well and heavily constructed breastworks (made of chestnut logs)"; and Confederate General McLaws echoed Nance's opinion when he defined the line as "quite a formidable work." Both Union and Confederate accounts agree that the rocky and precipitous eastern spine of the mountain anchored the right edge of the works. The left side of the defense stretched "a few rods" down the western slope. Trees had been cut and left on the ground in front of the breastworks for approximately 40 yards, forming a slashing or abatis.[74]

The precise location of this defensive position remains unknown. Colonel Ford places it about one mile north of the Lookout, but other descriptions locate it approximately 300 to 440 yards north of the Lookout.[75] Unfortunately, using the Lookout as a landmark yields limited results, because its location also remains nebulous. Several contemporary accounts place the Lookout one to one and one-quarter miles north of Harpers Ferry. If this distance refers to a measurement along the crest, then the breastworks used during the siege possibly existed in the vicinity of the Stone Fort. If, however, the Lookout stood at the present site of the Stone

Fort, the Union defensive line probably existed north of the current park boundary.

Confederate Stockade (1861)

Col. Thomas J. Jackson assumed command of Southern forces at Harpers Ferry on April 30, 1861. One week later, he informed Maj. Gen. Robert E. Lee that he had just finished reconnoitering Maryland Heights, and had "determined to fortify them at once, and hold them . . . be the cost what it may."[76]

Jackson subsequently ordered the 500 troops in Col. Blanton Duncan's 1st Kentucky regiment to the crest of Maryland Heights on May 9, 1861. Forces from Maryland and Virginia occupied the mountain later that month, and soon the Confederates began erecting a stockade upon the crest of Maryland Heights.[77]

The precise location of this stockade remains unknown. In a May 28, 1861, report from Brig. Gen. Joseph E. Johnston, who had superceded Jackson as the Harpers Ferry commander on May 23, Johnston remarked that a detachment of 350 infantry occupied a "point" on Maryland Heights one and one half miles north of the mountain's southern extremity. Johnston failed to identify the regiment, however, and he made no mention of a stockade at this position.[78]

A stockade definitely existed, for a June 20, 1861, issue of Harper's Weekly portrayed the structure under the title "Stockade and Camp of the Kentucky Regiment (Rebel), On the Maryland Heights" (Figure 5.12). In contrast to the Harper's Weekly, a June 5, 1861, article in the Richmond Dispatch identified the builders of the stockade as the Montgomery Fencibles, an infantry company from Montgomery County, Virginia.[79]

A vivid description of this stockade comes from a reporter for the New York Herald, who visited the site on June 20, 1861--one week after the Confederates evacuated Maryland Heights and the same day the stockade illustration appeared in Harper's Weekly. The correspondent's words best describe the structure:

> Along this neck [a narrow section of the crest] the Kentuckians constructed also an old fashioned stockade, such as their fathers were wont to repel Indian attacks with almost a century ago. These are known upon the Western frontier now-a-days by the name of blockade. It had thirteen entrances upon the south side, was near one hundred feet long. It consisted of hewn chestnut posts squared with an axe upon their edges and driven into the ground like spikes are driven, being sharp at the lower point. Between every second of the joints was a loop-hole, which is an indentation in each log directly opposite the other. Through this the gun is thrust and the fire delivered upon an advancing enemy. In the center of the stockade poles were longer, and a platform was erected at about the height of eight feet. Loop-holes were also cut in these at the height of about three feet.[80]

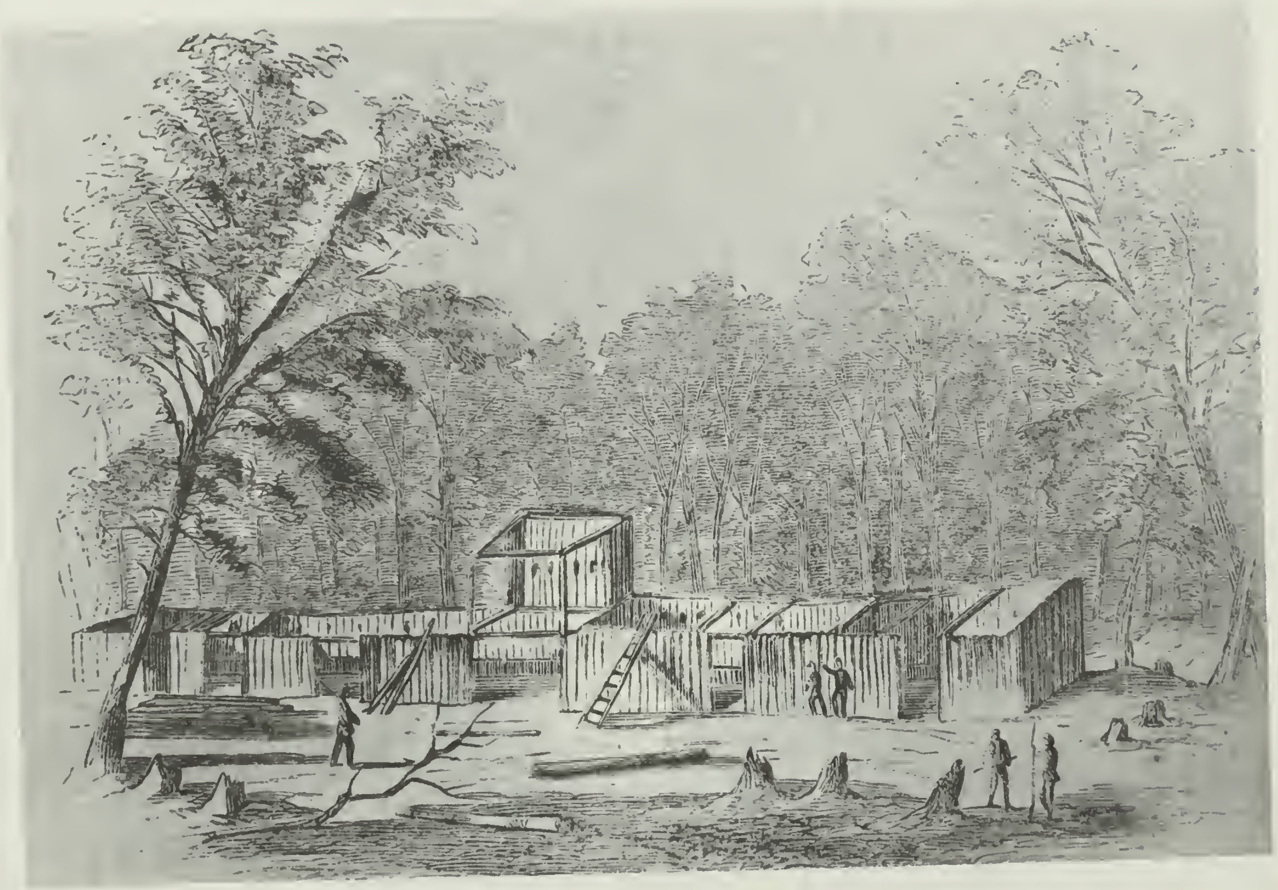


Figure 5.12 Confederate Stockade on Maryland Heights, from Harpers Weekly, June 20, 1861

The reporter criticized the builders for "so rude a mode of fortification"; and then explained that a six or twelve-pounder gun "would have knocked their central high spikes into a thousand splinters, and sent the upper tier of men kicking, jumping and sprawling among their companions below."[81]

One day after the news article and illustration appeared (June 21), Capt. John Newton, chief of engineers for Maj. Gen. Robert Patterson's Union army, began an examination of Maryland Heights for possible occupation and defense by the Federals. Oddly, Newton made no mention of the Confederate stockade. For that matter, nothing in Newton's report gave any indication that the Southerners ever had occupied Maryland Heights. As General Patterson remarked in forwarding Newton's comments to Washington: "The report is not as full as I desired it to be."[82]

FORTIFICATION DESCRIPTIONS

Three contiguous fortifications--the Stone Fort, Interior Fort, and Exterior Fort--anchor the northeast corner of the defensive lines on Maryland Heights (Figure 5.13). These three positions extend from the east brow of the mountain crest down approximately one-third of the west slope and are designed to defend approaches from the north. The steep and rocky east face of the mountain presents a natural barrier that required no heavy fortification.

A line of batteries overlooking Pleasant Valley and the Potomac River follow the crest south of these fortification. The first of these defensive works, the 100-pounder Battery, lies roughly 2,850 ft south of the Stone Fort (Figure 5.13). With a 360-degree range, this battery holds a commanding position along the narrow ridgetop. South of the 100-pounder Battery, the crest broadens into a narrow plateau that extends to the Mortar Battery. Below this point, the ridge drops sharply to the 30-pounder Battery (Six-gun Battery), which anchors the south flank of the Maryland Heights defensive system. An earlier fortification, the Naval Battery, occupies an isolated position above the Potomac River.

As part of the Maryland Heights Project, the fortifications briefly introduced above were recorded through mapping and photography. As the majority of these defensive positions consist of earthworks, topographic mapping yielded the best maps and the most information about these works. These maps are presented in this chapter, accompanied by descriptions of each of the fortifications.

Methodology

The primary reference points on Maryland Heights consist of a United States Geological Survey (USGS) triangulation station on the crest of the mountain (just south of the Stone Fort), and concrete boundary monuments established when the National Park Service surveyed the property in the early 1960s. Maryland State Grid (MSG) coordinates assigned to the triangulation station and the boundary monuments provide a ready-made set of reference points. In addition, known elevations of the three USGS markers on the crest permitted computation of the elevations of all points measured during the survey.

An internally-reading transit (Topcon AG-20B) and leveling rods were used throughout the project. All vertical and horizontal transit angles were read to the nearest minute. The leveling rods were divided into hundredths of feet; all readings were taken to the closest hundredth. The information from each reading--provenience, vertical and horizontal angles, and the three measurements from the leveling rod--was recorded in an engineering field book. Because a compass was not used, each transit set-up involved shooting back to the previous station to establish a bearing.

The first step in the fieldwork involved establishing control points at the individual sites scheduled for mapping. To accomplish this, a long, U-shaped baseline was traversed southward along the crest through the fortifications and some of the campground areas, down to the Naval Battery, and northward on Road J along the west base of the mountain. The USGS triangulation station on the crest provided the initial bearings for this baseline. Wooden stakes were set in the fortifications and at intervals along the baseline for control, or reference points. Additional traverses were conducted along the east flank of the mountain (Roads A and H) and down the main fire road (Road U) to establish additional control points for mapping roads and domestic sites.

Each transit station along the baselines received a unique number designation. During the initial traverse through the fortifications, these numbers were assigned sequentially, beginning with the number 1. Thus, the 18th transit station along the traverse was identified as T18. If a stake were set at that point, it was labelled T18. In the case of later traverses, designations began with an even multiple of 100. For example, the baseline traverse along Road A began with the number T500, with the next transit station designated T501, and so forth.

Generally, four people participated in each traverse. One person operated the transit, one recorded notes and measurements in the field book, and the other two worked the leveling rods, one as backsight and the other as foresight. This arrangement proved the most efficient way to traverse the difficult terrain on the mountain.

Each traverse finished at a point with known MSG coordinates, generally the concrete boundary monuments set in the corners of the National Park Service property. By closing the survey in this manner, any errors were discovered and adjusted for misclosure. The control traverses crossed slightly more than seven miles. The average precision for the total number of traverses equaled 1/400, or one-foot error for every 400 ft measured.

At least two wooden stakes or metal pipes were placed within sight of each other in each fortification. The second point was required as a backsight to establish elevation and initial bearings.

With the exception of the Stone Fort, the fortifications on Maryland Heights within the park boundary are comprised of large earthworks. To effectively map these defensive works, systematic recordings of topographic points were made. Measurements concentrated at breaks in topography and along large, definable features such as ramparts, ditches, and magazines. These measurements were recorded in the field books, along with descriptive information on the area being mapped. Once fieldwork was completed, the points and their elevations were plotted on paper. Contour lines then were drawn at one-foot intervals.

Figure 5.13

In the Stone Fort, corner points were surveyed using the transit. Tapes were stretched along the tops of the walls between two recorded points, and the stones drawn with measurements taken from the tapes.

Features located within the fortifications, with the exception of those within the Exterior Fort and recorded as part of Campground Area 12, were not assigned feature numbers. Instead, they are described and labelled as platforms, stone foundations, etc (Figure 5.14).

Stone Fort

The remnants of the Stone Fort straddle the narrow crest of Maryland Heights at the highest elevation within the Park Service boundary (1448 ft). The precipitous drop to the east provides a commanding view of Pleasant Valley and South Mountain. To the west, the ground slopes gradually into the enclosed Interior Fort.

In plan view, the Stone Fort consists of a rectangular stone foundation flanked by two stone bastions, one off the northeast corner and the second extending from the southwest corner (Figure 5.15). The rectangular foundation, which comprises the main area of the fort, has interior dimensions of 100 ft along its north-south axis and 45.5 ft from east to west. This enclosed area is soil-filled, in contrast to the exposed bedrock predominating along the crest in the immediate vicinity.

The walls of the fort are constructed of dry-laid fieldstone hewn from nearby outcroppings of Weverton quartzite. These walls vary greatly in size and preservation. The north wall--the most substantial in the Stone Fort--averages about eight feet in width. Large, roughly cut, coursed stones form the interior and exterior wall faces, with smaller stones and clay packed between the rocks. At its greatest height near the northeast bastion, the north wall stands four feet high. The Maryland Heights hiking trail presently crosses over the center of the wall, and has caused extensive erosion in this area.

In contrast to the north wall, the west foundation is narrow (4.5 ft) and generally constructed of smaller stone, although it also has a rubble and clay fill. This wall has slumped perceptively toward the west. Along its north end, the west face has collapsed entirely.

The narrow east wall of the Stone Fort measures only 4.5 ft wide, but is exceptionally well constructed. This foundation consists of large, cut fieldstones, several of which have drill holes along their sides. Small chinking stones fill the gaps between the large foundation stones. Packed in the interstices between the interior and exterior wall faces are small stones and clay. Erected on bedrock, the east wall sits on the extreme eastern edge of the mountain crest. At its highest point, the east face of the wall stands 9.5 ft above the exterior ground surface (Figure 5.16). Most of the eastern face, however, averages about five feet in height. In

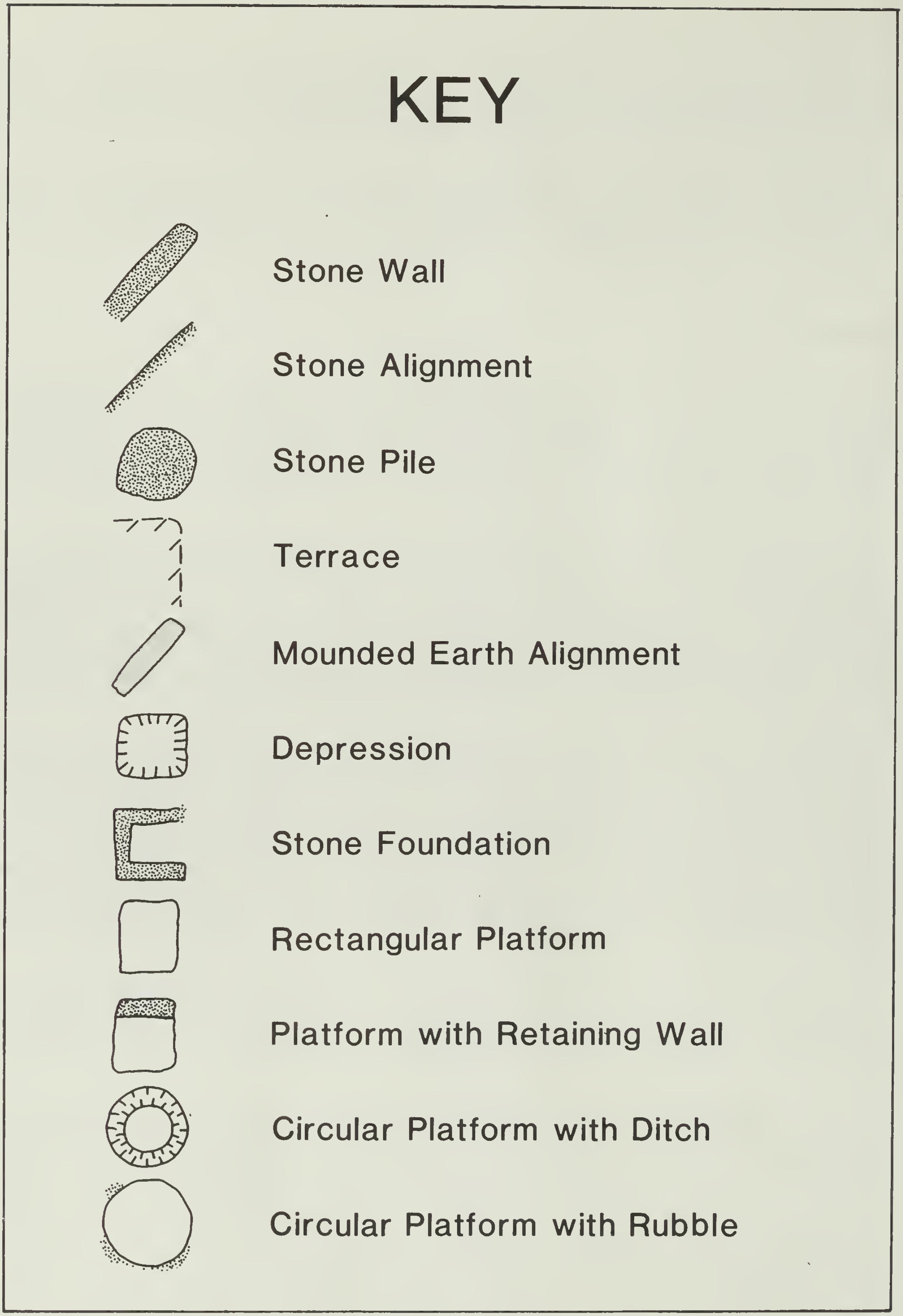
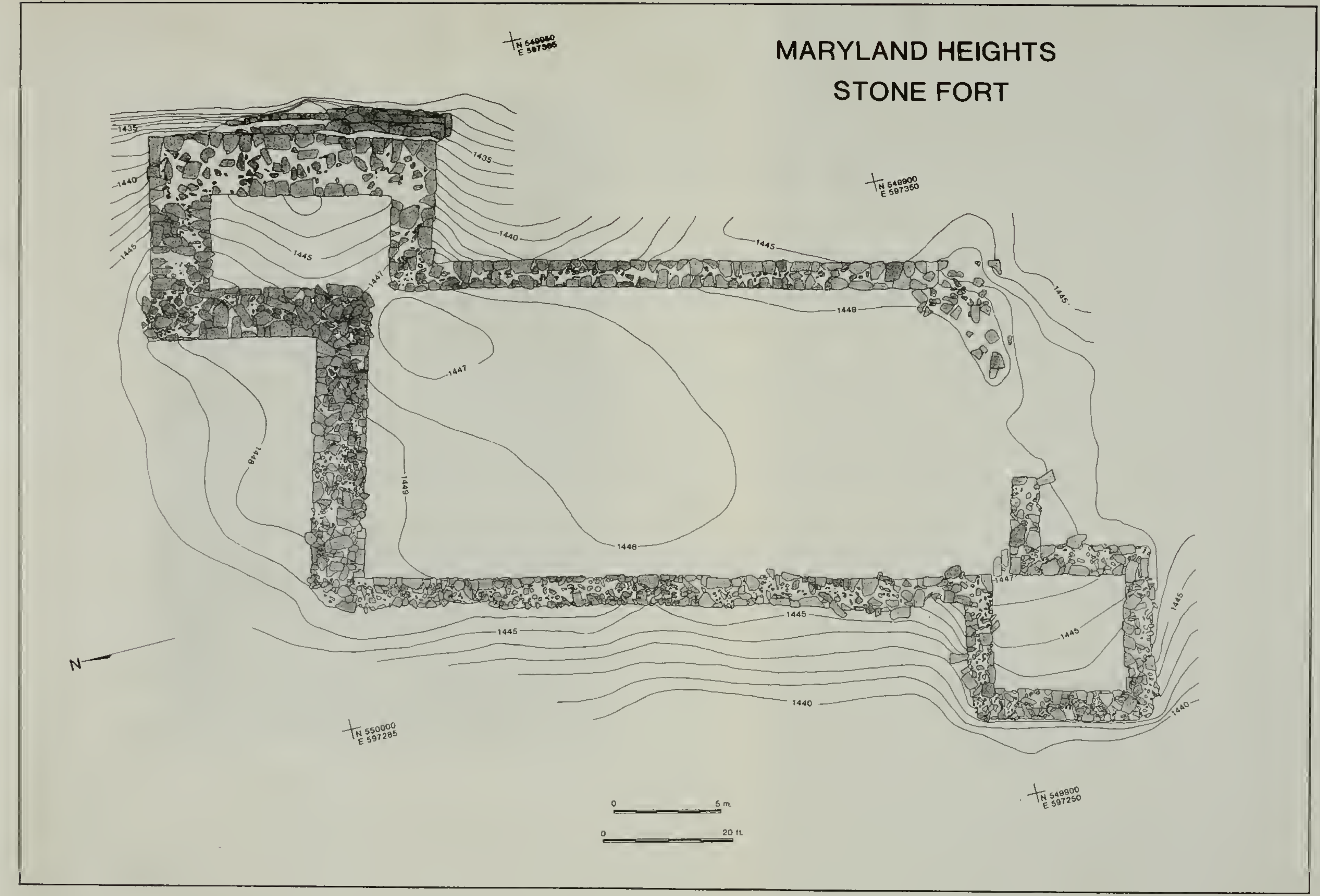

KEY
Stone Wall
Stone Alignment
Stone Pile
Terrace
Mounded Earth Alignment
Depression
Stone Foundation
Rectangular Platform
Platform with Retaining Wall
Circular Platform with Ditch
Circular Platform with Rubble

Figure 5.14

N



MARYLAND HEIGHTS STONE FORT

N 549960
E 597365
N 549900
E 597350
N 550000
E 597285
N 549900
E 597250
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1445
1447
1448
1449
N
0
5 m.
0
20 ft.

Figure 5.15

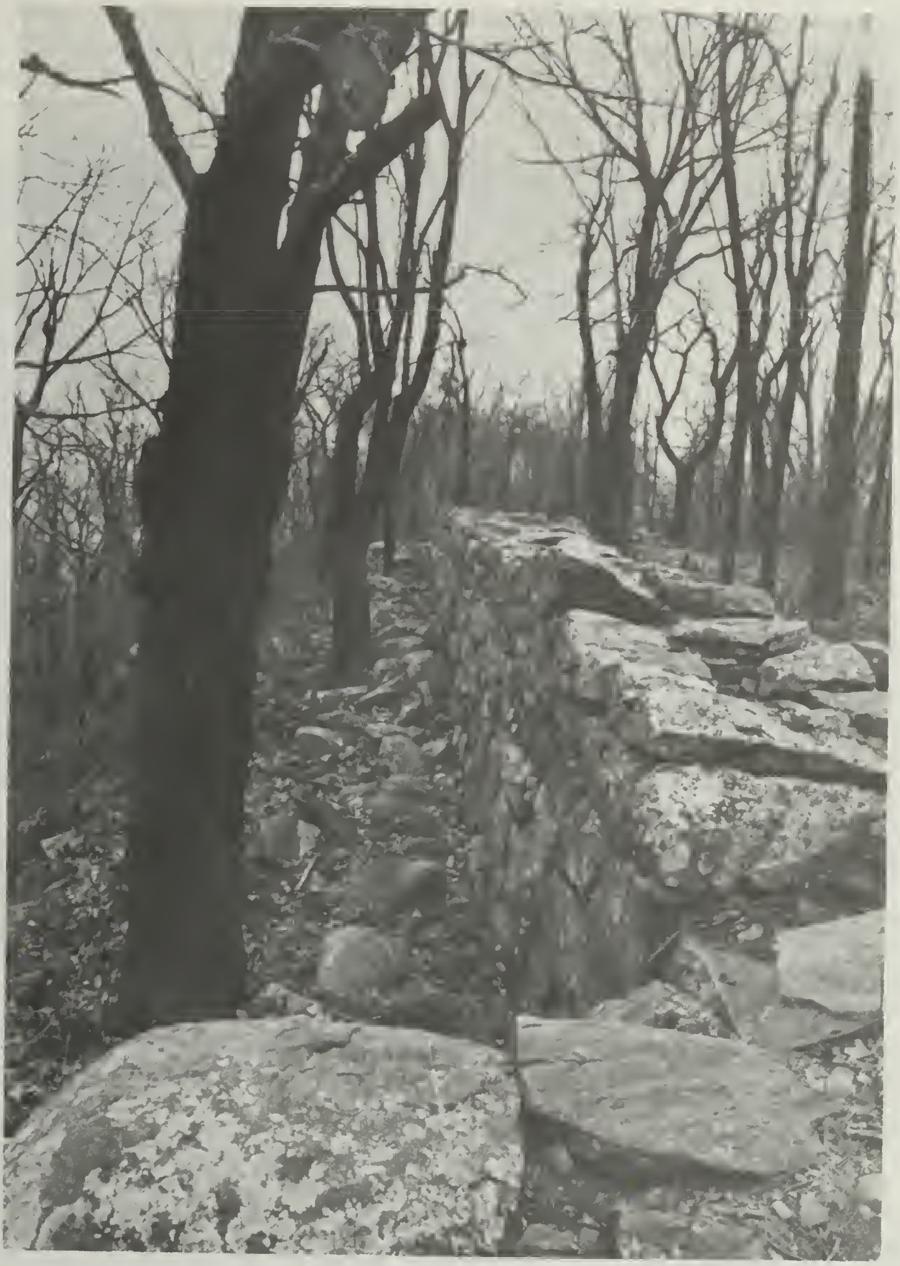


Figure 5.16 Stone Fort. East face of the east wall, looking south.

contrast, the lower, west face of this wall extends only one or two courses above the interior ground surface.

Little above-ground evidence exists for a substantial south wall. A ten-foot long wall stub extends eastward from the southwest bastion. A scattered and low-lying pile of rubble lies east of this wall remnant, but does not form a definable foundation. As a result, the southeast corner of the Stone Fort is not defined, especially as the south end of the east foundation wall also is not complete. The Maryland Heights hiking trail enters the fort between the extant wall segment and the stone rubble.

The northeast bastion stands as the larger and better preserved of the two. Along its inside corners, the bastion measures 28 x 15 ft. Its thick walls measure six to ten feet wide and are constructed of large, cut facing stones (Figures 5.17 and 5.18). The east wall of this bastion is battered, or stepped, from top to bottom and rests on bedrock.

Both the north and south walls of this bastion drop roughly five feet in elevation from west to east. The bastion interior is rubble-filled, particularly around its edges, with stones that have fallen from surrounding walls. As a result, no original ground surface is discernible inside the bastion. In the southwest corner, an entryway three-feet wide connects the northeast bastion with the central part of the fort.

The southwest bastion differs in several respects from the northeast bastion. It is smaller--20.5 x 18.5 ft--and almost square in configuration. The narrower walls of the southwest bastion vary from four to five feet in thickness and are constructed of the large stones characteristic of the fort as a whole. Although the interior faces of the bastion walls are relatively well-preserved, the outside edges have slumped and become ill-defined. Similarly to the northeast bastion, the north and south walls of the southwest bastion also drop about five feet in elevation. In addition, the southwest bastion interior is filled with stones that apparently have fallen from surrounding walls. In the northeast corner, an entryway three-feet wide allows passage into the bastion.

The walls of both bastions tie into the central foundation of the fortification, suggesting that all areas of the fort were constructed at the same time.

Interior Fort

The Interior Fort forms an enclosed, rectangular earthwork. At its greatest dimensions the fort measures 280 x 230 ft (Figure 5.19). This defensive position embraces part of the crest, including the Stone Fort in its southeast corner, and a narrow plateau just below the west side of the ridge top.

A linear rubble concentration with a low-lying east face defines the eastern edge of the fortification. This stone alignment begins just north

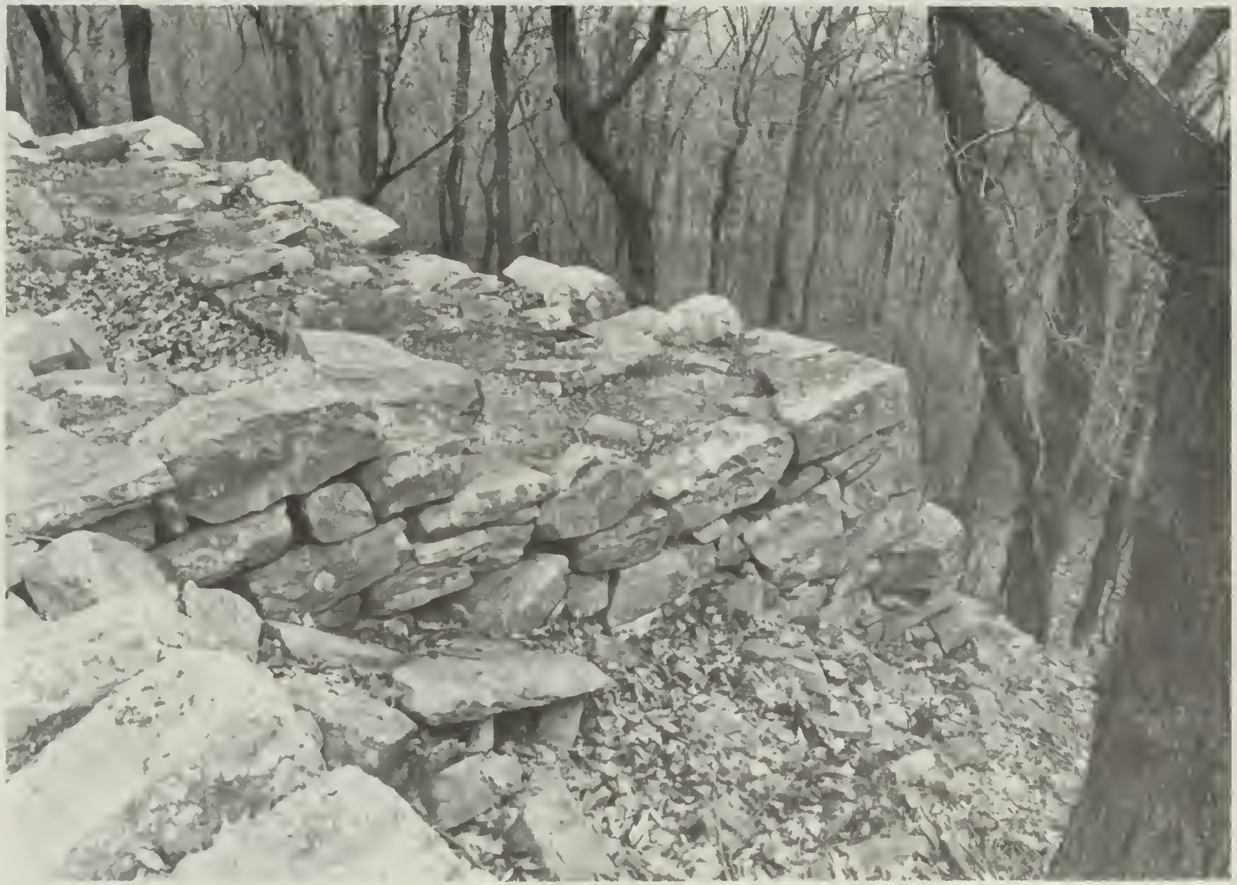
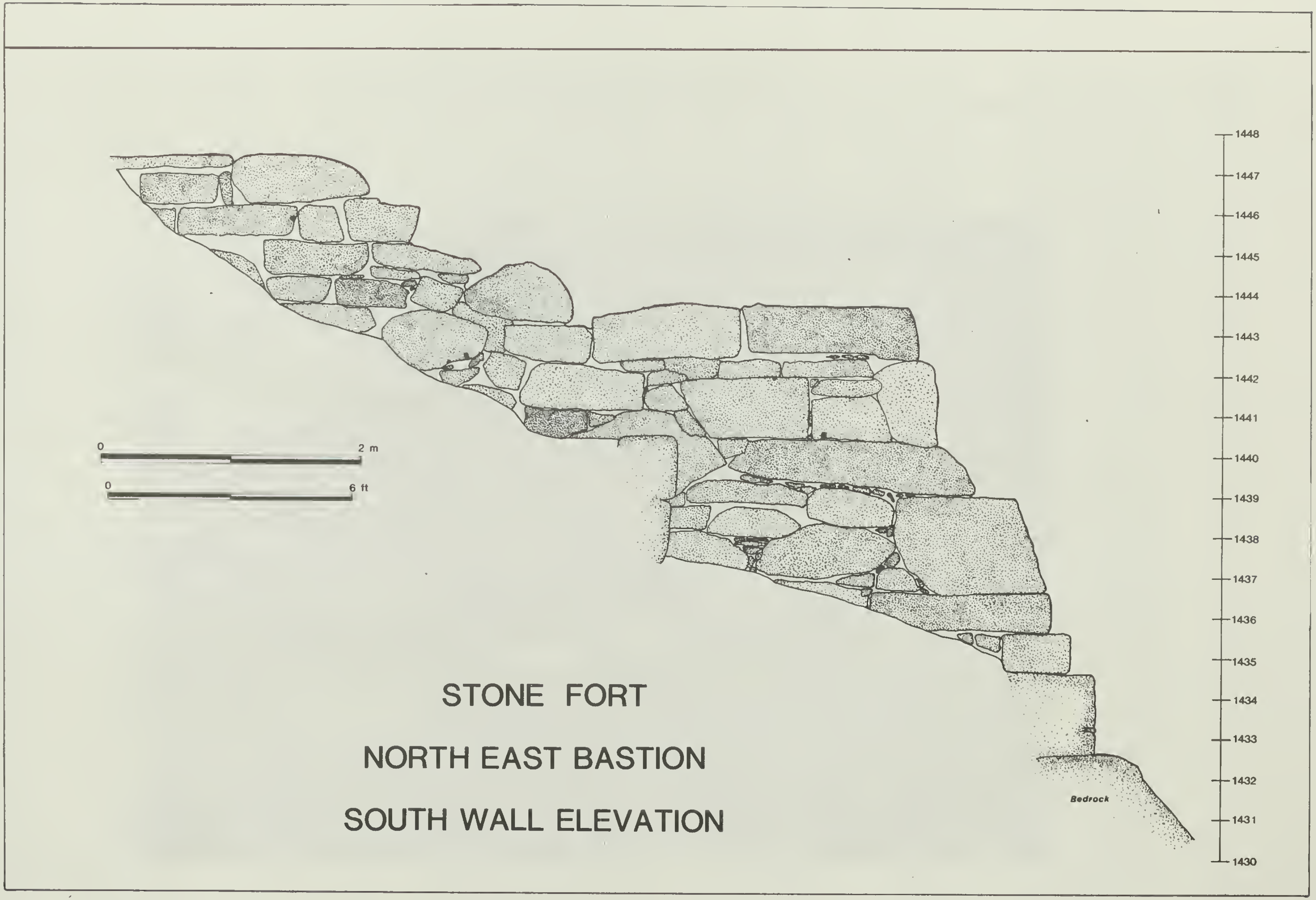


Figure 5.17 Stone Fort. South and east walls of the northeast bastion, looking northeast.


1448
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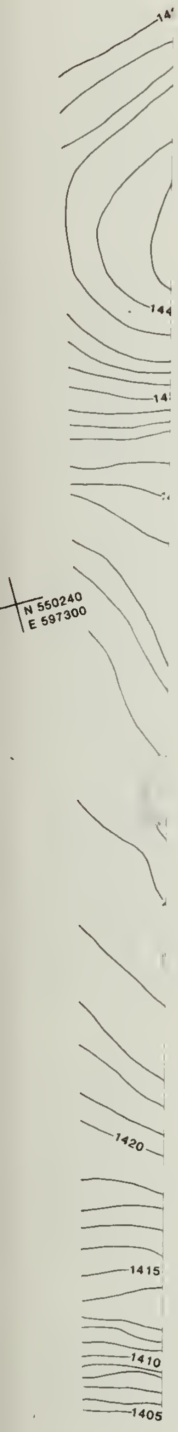
1435
1434
1433
1432
1431
1430
Bedrock
0
2 m
0
6 ft

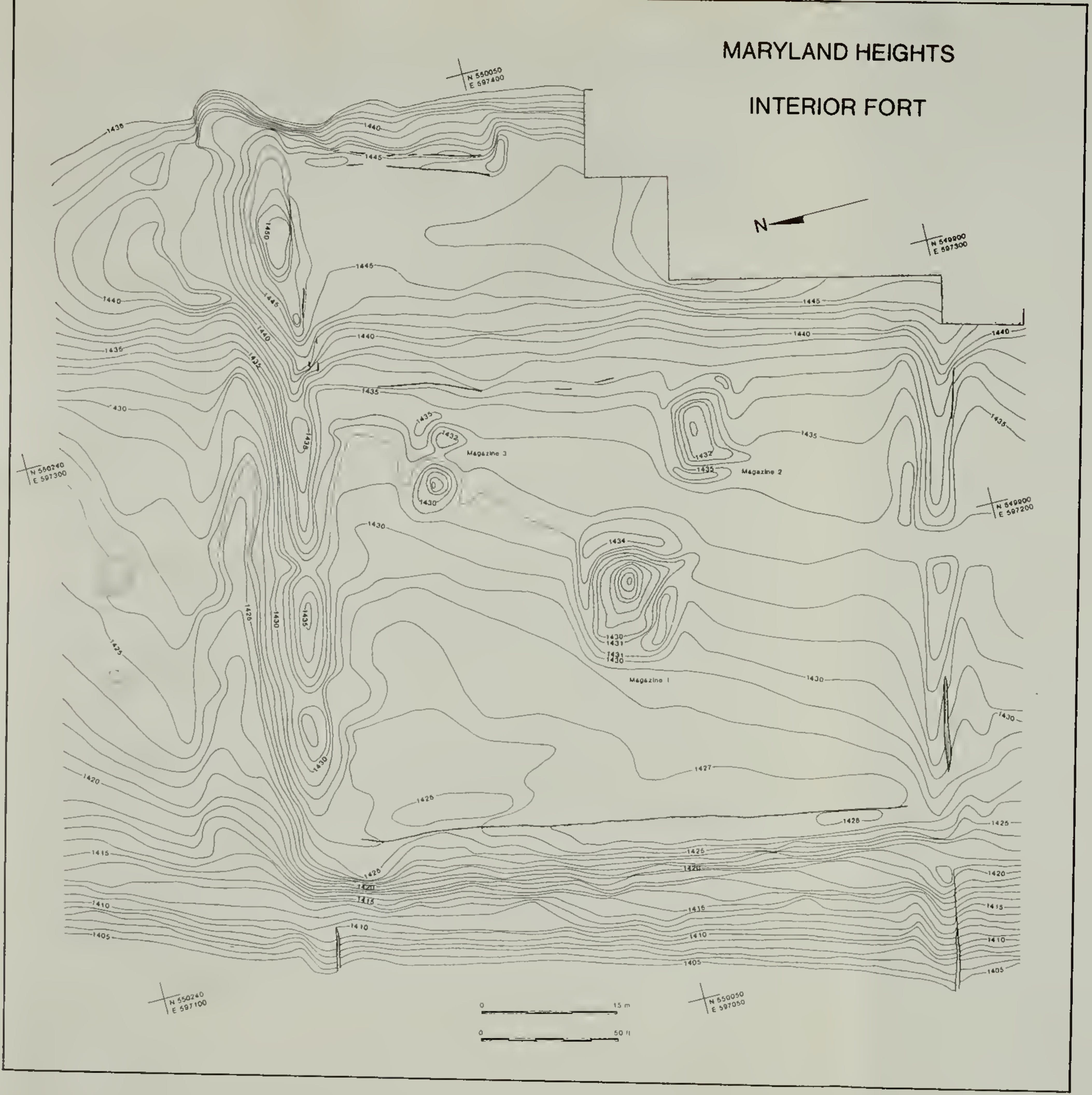
STONE FORT

NORTH EAST BASTION

SOUTH WALL ELEVATION

Figure 5.18


N 550240
E 597300
1420
1415
1410
1405


MARYLAND HEIGHTS
INTERIOR FORT
N
N 550050 E 597400
N 549800 E 597300
N 550240 E 597300
N 549800 E 597200
N 550240 E 597100
N 550050 E 597050
Magazine 3
Magazine 2
Magazine 1
1450
1445
1440
1435
1434
1432
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1430
1428
1427
1425
1420
1415
1410
1405
0 15 m
0 50 ft

Figure 5.19

of the Stone Fort and extends along the east brow of the crest before fading out near the northeast corner of the Interior Fort. Originally, this rubble probably formed a standing wall.

A large earthen rampart and ditch along the north side of the Interior Fort comprises the primary entrenchment of this defensive work (Figure 5.20). The rampart begins near the east edge of the crest, although the Maryland Heights hiking trail (which passes over this point) has obscured its original configuration. From the crest, the earthwork follows a short, but steep descent westward onto a narrow plateau. It then extends to the northwest corner of the fort at the west edge of the plateau.

The parapet of the north rampart is broken by five saddle-shaped, eroded embrasures. Four of these embrasures stretch along the main plateau at fairly regular intervals of 45 to 55 ft (one lies in the extreme northwest corner of the fortification). The remaining embrasure sits upon the west edge of the crest. On the south side of each embrasure is a raised, earthen-topped gun emplacement constructed against the interior parapet slope (Figure 5.21). Level, built-up surfaces define these platforms.

A well-defined, but irregularly-shaped, ditch cuts across the plateau along the north side of the rampart (Figure 5.20). The east edge of this ditch commences at the base of the slope leading to the crest. On its west end, the ditch terminates between the two westernmost embrasures. The interior slope of the ditch encompasses part of the exterior parapet slope and is fairly uniform in configuration. The ditch's exterior slope, however, is cut unevenly.

A low-lying breastwork delimits the west side of the Interior Fort. This breastwork is about six feet wide and defined along its east face by a dry-laid stone retaining wall. The steep exterior slope of the breastwork contains remnants of a second stone retaining wall near the base of the incline. Adjacent to the exterior slope lies a well-preserved road trace (Road JJ) that runs the length of the breastwork and separates the Interior Fort from the Exterior Fort.

Along the south side of the Interior Fort is a modest breastwork that extends from the southwest corner of the earthwork to the northwest corner of the southwest bastion of the Stone Fort. Remnants of low, dry-laid stone retaining walls distinguish the south face of the breastwork in some areas, but most of it presently consists of eroded earthen embankments. The only entrance into the Interior Fort cuts through the center of the breastwork; this entryway is ten feet wide.

A shallow, uneven ditch extends along the exterior side of the south breastwork, breaking only at the entryway. A second shallow ditch follows the interior side of the entrenchment east of the entryway. Both ditches disappear at the base of the slope leading up to the southwest bastion of the Stone Fort.

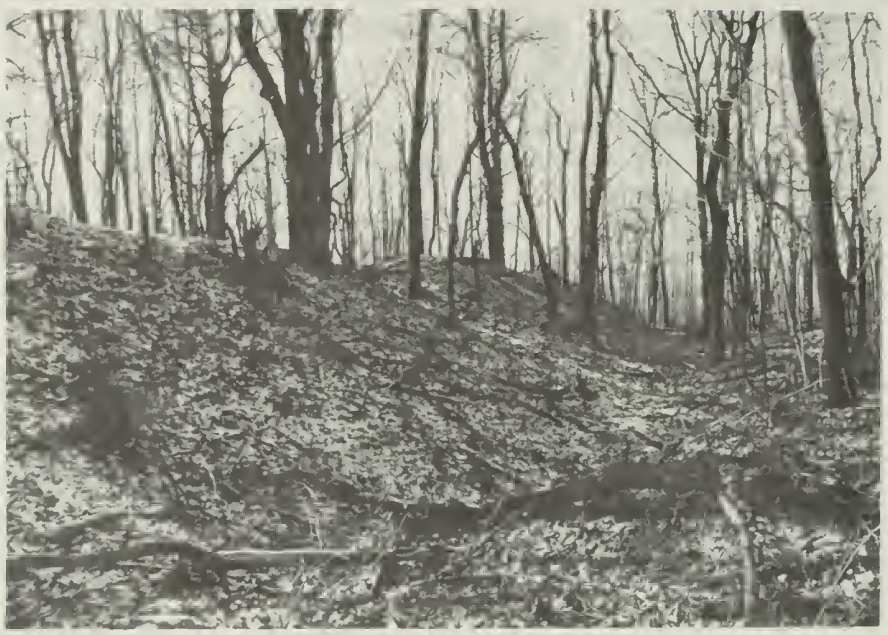


Figure 5.20 Interior Fort. Exterior side of north rampart and ditch, looking west.

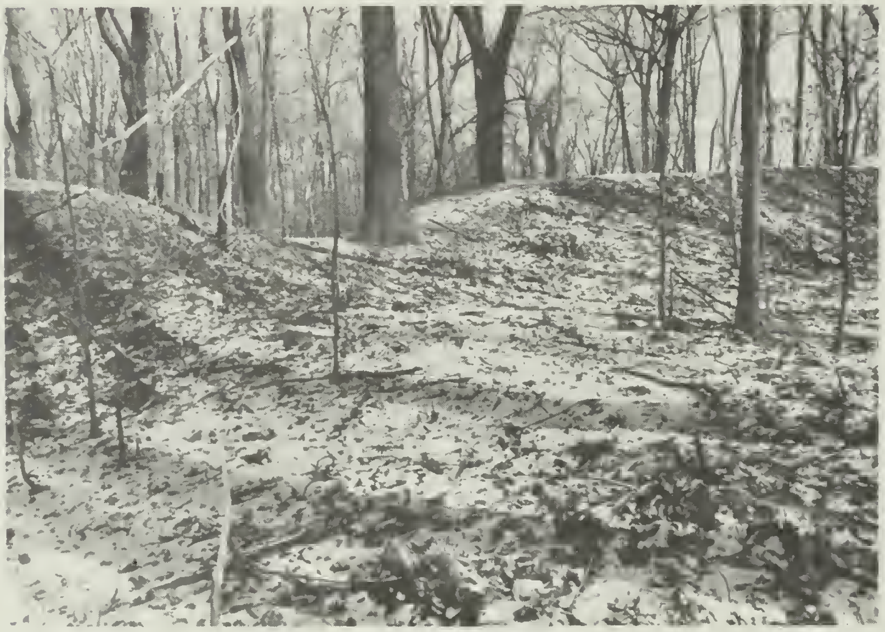


Figure 5.21 Interior Fort. Interior side of north rampart, looking east-northeast. Note embrasure in rampart and platform behind the embrasure in center of photograph.

The Interior Fort earthwork encloses a relatively level, almost stone-free area that slopes gradually towards the west. Three large, rectangular holes identified as the remnants of powder magazines break this uniform incline. The largest of the three, Magazine 1, sits in the center of the fort (Figures 5.19 and 5.22). In its present eroded form, the magazine measures approximately 38 x 25 ft along the top edge of its berm, and it extends roughly eight feet below grade at its deepest point. The berm entirely surrounds the magazine, except at the entrance in the southeast corner. The short, steep entrance opens to the south.

The interior of Magazine 1 divides into two sections. Steep, sloping sides ending in a deep, rounded base characterize the east end, which lies adjacent to the entrance. In contrast, the west side is shallow and relatively level, forming a shelf that occupies about one-quarter of the magazine interior.

A short distance southeast of Magazine 1 lies a second magazine with smaller dimensions of 30 x 20 ft. The berm of Magazine 2 is distinct, although it does not extend above the ground surface on the east side of the magazine. A prominent entryway occupies the southwest corner; this entrance projects beyond the berm about ten feet and is lined with the remnants of a dry-laid stone retaining wall. The entryway drops sharply once inside the magazine. The base of Magazine 2 is broad and almost level. At its deepest point, this base extends approximately four feet below the surrounding ground surface.

Between Magazine 1 and the north rampart sits Magazine 3. Although the same size as the second magazine--30 x 20 ft--this magazine differs significantly in configuration. An earthen partition about 3.5 ft wide divides Magazine 3 into two chambers. A passageway between the two compartments cuts through the north end of the partition. The west chamber composes the magazine proper. It is almost square (22 x 20 ft), with steeply sloping sides that end at a deep, rounded base about five feet below surrounding grade. A slight berm line exists along the top of the north and west sides, but is not found on the south edge.

The rectangular and shallow eastern compartment forms a passageway between the west chamber and the magazine's entrance in the southeast corner. A well-defined berm delineates the north side of this passage, but a raised mound is not evident along the east edge. Several flat stones concentrated around the mouth of the entrance suggest that retaining walls once lined it on both sides.

A linear stone concentration extends along the east edge of the plateau at the base of the short slope to the crest. The alignment begins at the northeast corner of Magazine 2 and continues to the interior slope of the north rampart. It is composed of the remnants of an irregular, dry-laid retaining wall finished on its west face. On the east side of this wall lie varying amounts of stone rubble five to ten feet in width.

This retaining wall remnant has been obliterated where the Maryland Heights hiking trail passes over it. At its present maximum height, the

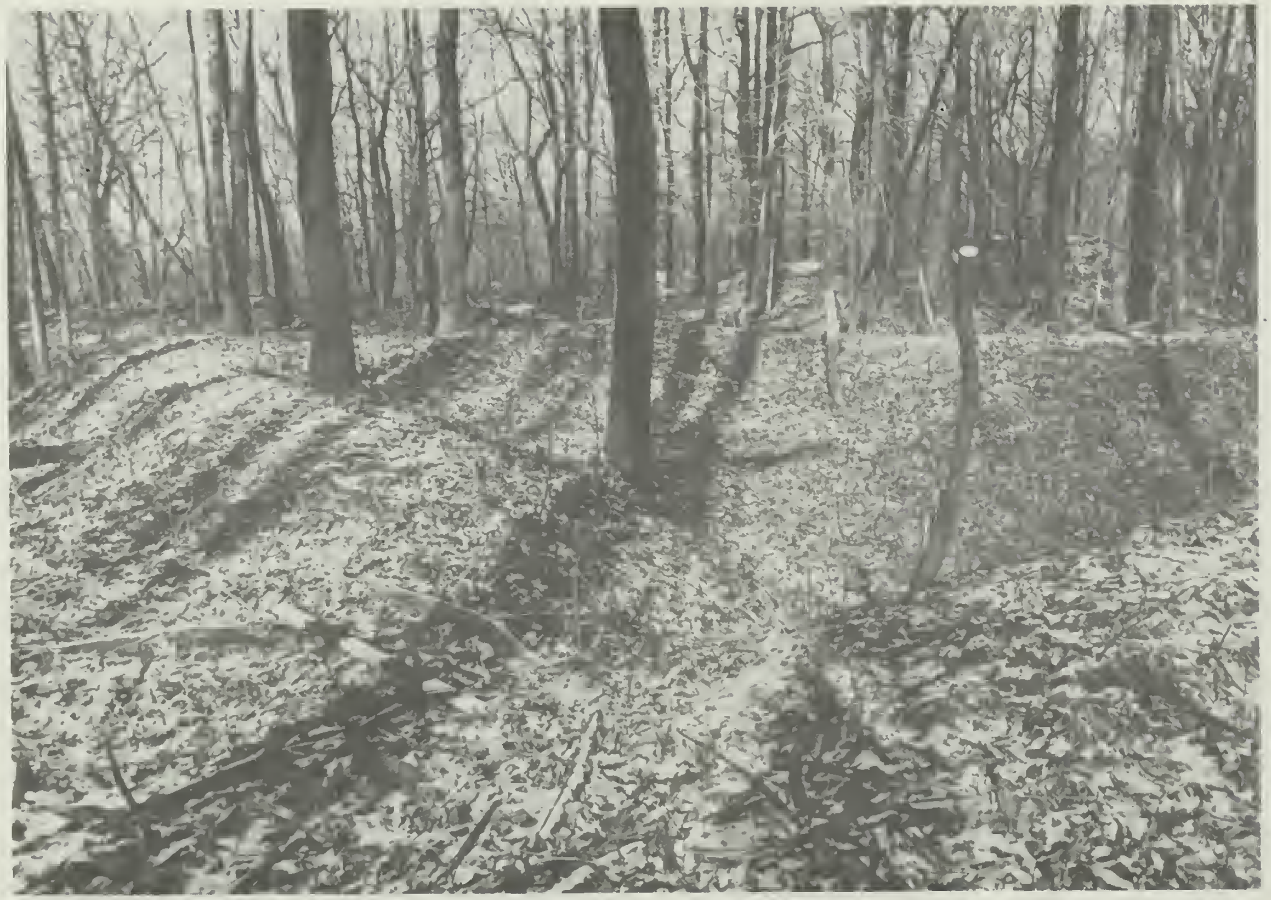


Figure 5.22 Interior Fort. Magazine 1, looking northwest. Note entryway in lower center of photograph and shallow shelf in west half of magazine.

wall face stands only two feet above the surrounding ground surface. The wall appears to have defined the east side of the main area of the Interior Fort.

Exterior Fort

Adjoining the Interior Fort along its west, or down slope, side is the Exterior Fort. Two essentially parallel defensive breastworks define this fortification. These breastworks begin on the west edge of a road trace (Road JJ) that separates the Interior Fort from the Exterior Fort (Figure 5. 13). The north breastwork extends downhill approximately 560 ft and anchors on a large rock outcropping (Figure 5.23). The south breastwork is somewhat shorter, stretching 520 ft and ending on a less imposing ledge. These two breastworks enclose nearly three acres of land and Campground Area 12.

The breastworks do not exactly parallel each other. Along the upper slope a distance of 220 ft separates them. At Charcoal Hearth 51, the fort is about 240 ft wide, while at the terminus of the south breastwork the defenses lie approximately 255 ft apart.

For descriptive purposes, the area covered by the Exterior Fort is divided into three topographic areas. Along the eastern end of the fort is a steep slope, designated the upper slope. This upper slope plunges downward from the Interior Fort to a narrow, gradually sloping plateau defined as the second topographic area. Below this plateau lies a second steep slope, described here as the lower slope. Fully half of the Exterior Fort lies on this lower slope. In fact, only one-third of the fort interior has a moderate grade.

The south breastwork is the better preserved of the two defenses. Along the upper slope, a dry-laid stone retaining wall about three feet high supports the south side of the breastwork (Figure 5.24). The parapet and north side form a sloping earthen embankment which terminates in a shallow, uneven ditch. Much of the south-side retaining wall has collapsed along the narrow plateau. The ditch in this area, however, is better defined.

In the middle of the plateau, a small, five-foot wide entrance cuts through the south breastwork. No roads were found in association with this entryway, the only one into the Exterior Fort. Just to the south of this entrance are the foundations of a large, stone blockhouse foundation (Feature CA2-F2) mapped as part of Campground Area 2 (Figure 6.18).

Along the lower slope, some intact sections of retaining wall still stand on the south side of the breastwork. In addition, a low-lying ridge of stone extends along the north edge of the parapet in this area. This ridge probably comprises the top of a second retaining wall, most of which lies buried beneath the earthen north slope of the breastwork (Figure 5.24). This ridge parallels the retaining wall and lies about four feet from it. As the breastwork progresses down the lower slope, the ditch on the north side becomes shallower and loses definition, but it disappears only with the end of the breastwork.

The south breastwork cuts through the northern edge of Charcoal Hearth 51 along the lower slope. Just below the hearth sits a substantial rock ledge over which the breastwork is constructed.

The north breastwork closely resembles the south breastwork. A stone retaining wall varying from two to three feet in height lines the south side of the breastwork along most of its length, although much of this wall has collapsed along the lower slope (Figures 5.25 and 5.26). A ridge of stone extends the length of the north edge of the parapet along this breastwork. This ridge parallels the retaining wall and lies about five feet from it (Figures 5.25 and 5.27). This stone ridge most certainly represents the top edge of a buried stone wall.

The north breastwork extends in a straight line down the mountain side until it reaches a point about 100 ft above its terminus. At this spot, the breastwork abruptly angles outward toward a large rock outcropping, upon which it terminates. This section is the most poorly-constructed part of the Exterior Fort. In fact, the north breastwork progressively deteriorates both in size and workmanship as it travels down the lower slope.

A well defined ditch parallels the north side of the breastwork for most its length. As with its counterpart along the south breastwork, this ditch is shallower on the upper slope and broadens and deepens along the plateau. It ends where the north breastwork begins to angle toward the rock outcropping. A second, shallower ditch parallels the south face of the breastwork as it crosses the plateau. This ditch extends a short distance down the lower slope before fading out.

100-pounder Battery

The 100-pounder Battery sits on the crest of Maryland Heights between the Stone Fort and the 30-pounder Battery (Figure 5.13). This site is second only to the Stone Fort in elevation (1374 ft), and it has a commanding view of Pleasant Valley and South Mountain. The battery is constructed at a point where the narrow ridge top of exposed bedrock opens toward the south onto a relatively level plateau about 130 ft wide. The mountain slopes sharply on both sides of this position, although to the west it is only a short drop to another plateau.

A raised earthen platform, constructed to support the 100-pounder gun, sits on top of the narrow ridge (Figure 5.28). Although heavily eroded, the platform is roughly circular in configuration and measures approximately 20 ft in diameter. It is constructed of earth and stone fill supported by dry-laid stone retaining walls and bedrock ledges.

N 550300
E 596500
N

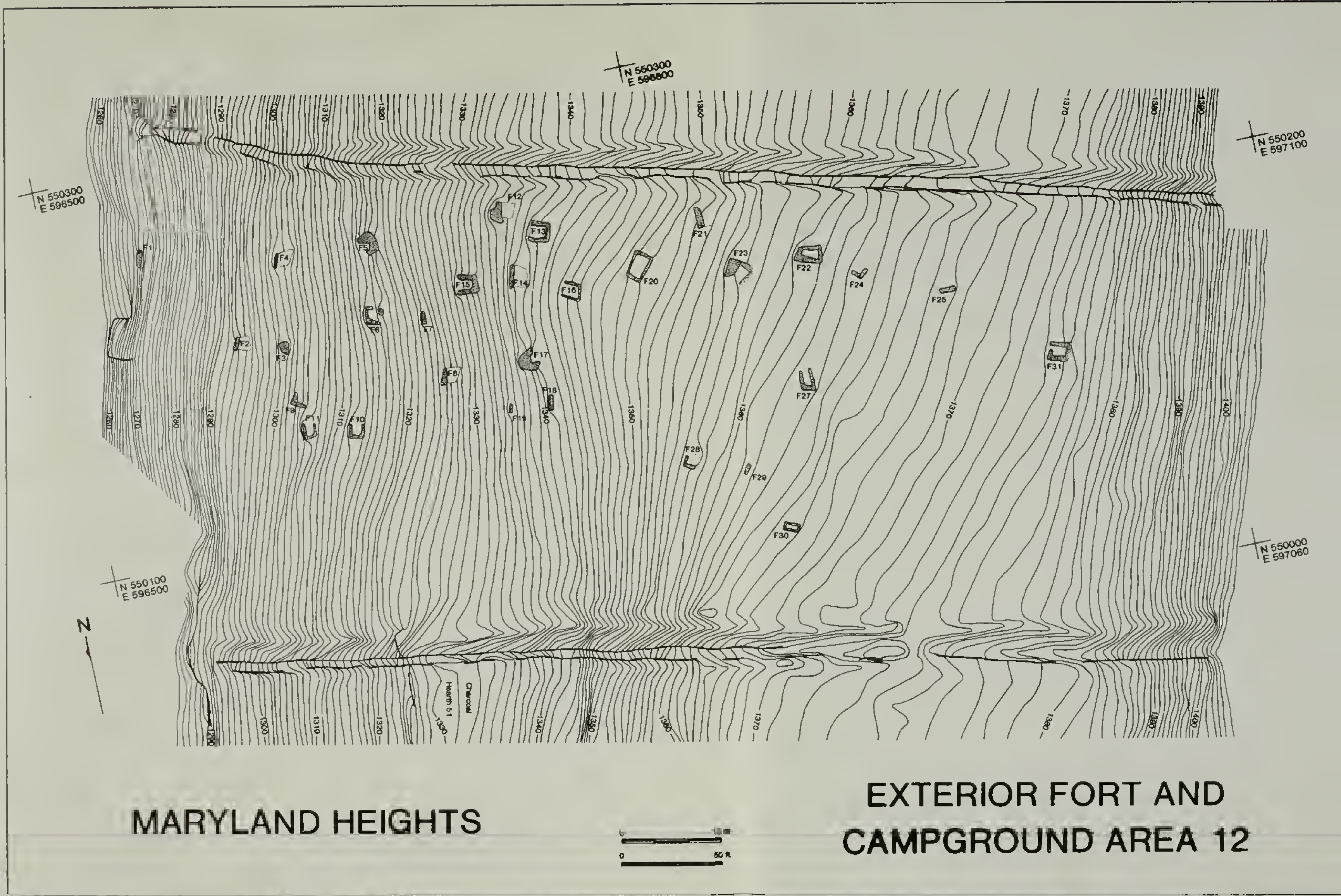

N 550300
E 596800
N 550200
E 597100
N 550300
E 596500
N 550100
E 596500
N 550000
E 597060
N
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
F13
F14
F15
F16
F17
F18
F19
F20
F21
F22
F23
F24
F25
F27
F28
F29
F30
F31
Hearth 61
Charcoal
1260
1270
1280
1290
1300
1310
1320
1330
1340
1350
1360
1370
1380
1390
1400
0
10 m
0
50 ft.
MARYLAND HEIGHTS
EXTERIOR FORT AND
CAMPGROUND AREA 12

Figure 5.23

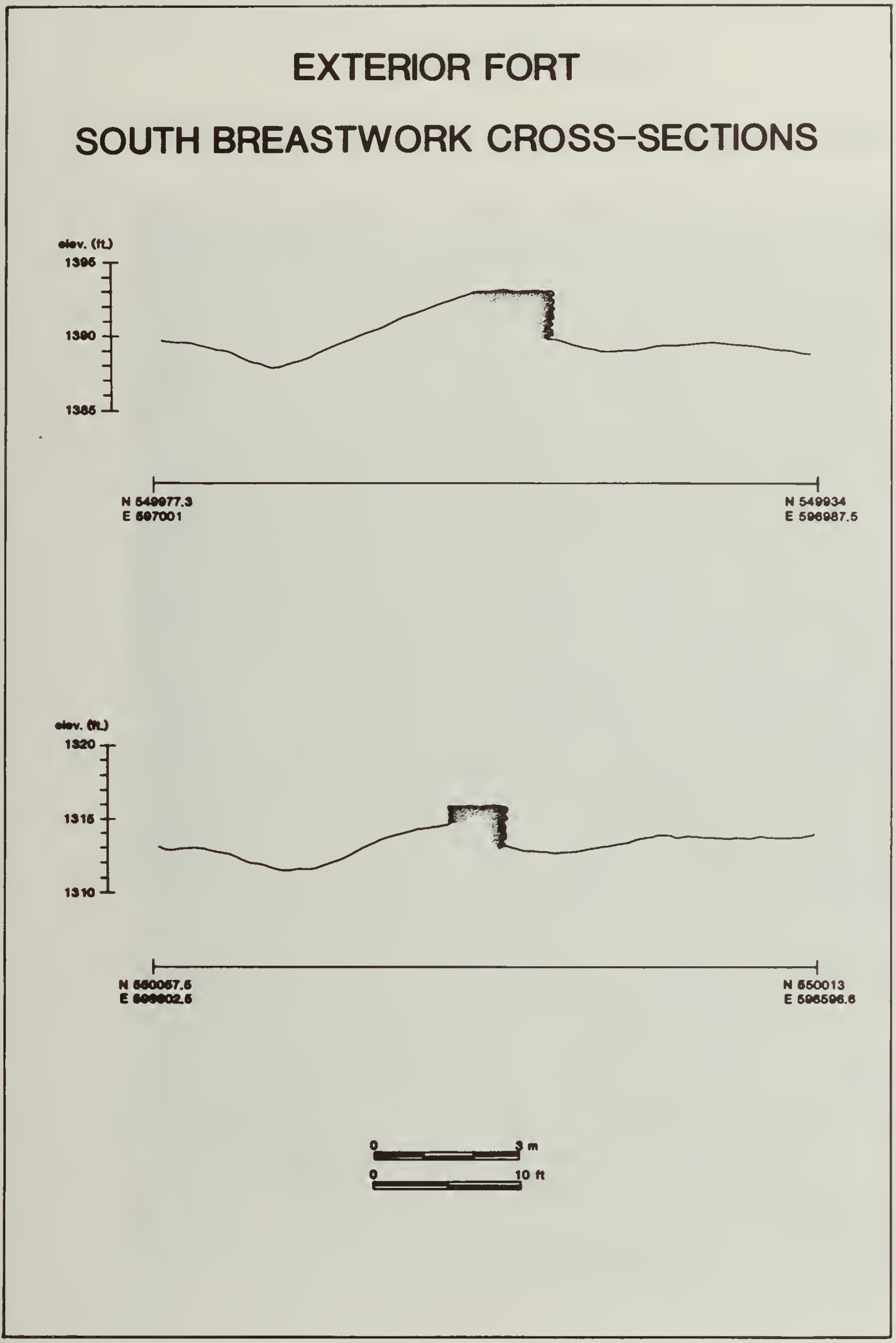


Figure 5.24 Cross-sections of south breastwork, Exterior Fort. The top section is from the upper slope, the bottom section from the lower slope.

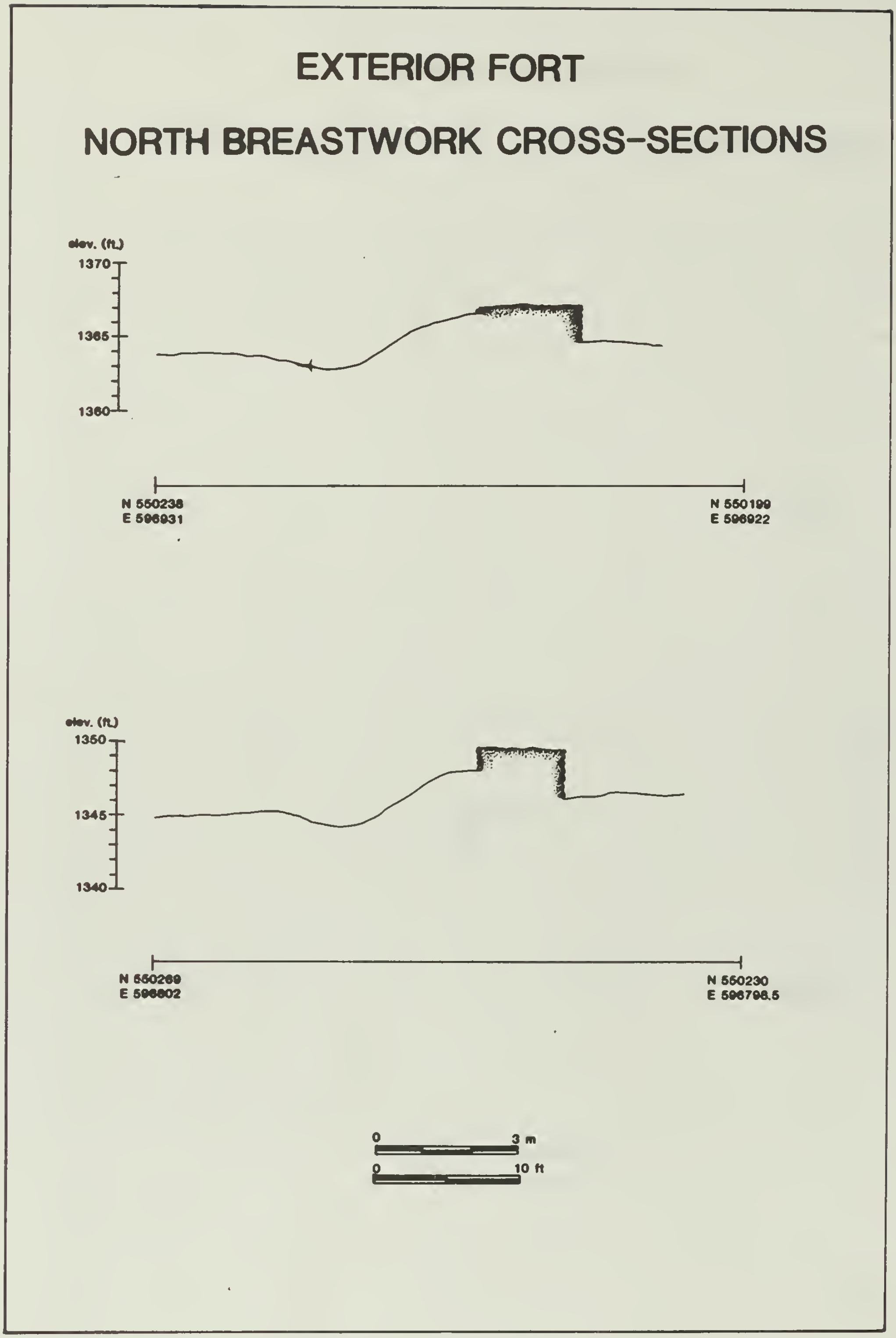

EXTERIOR FORT
NORTH BREASTWORK CROSS-SECTIONS
elev. (ft.)
1370
1365
1360
N 550238
E 596931
N 550199
E 596922
elev. (ft.)
1350
1345
1340
N 550269
E 596802
N 550230
E 596798.5
0
3 m
0
10 ft

Figure 5.25 Cross-sections of north breastwork, Exterior Fort. The top section is from the plateau, the bottom section from the lower slope.

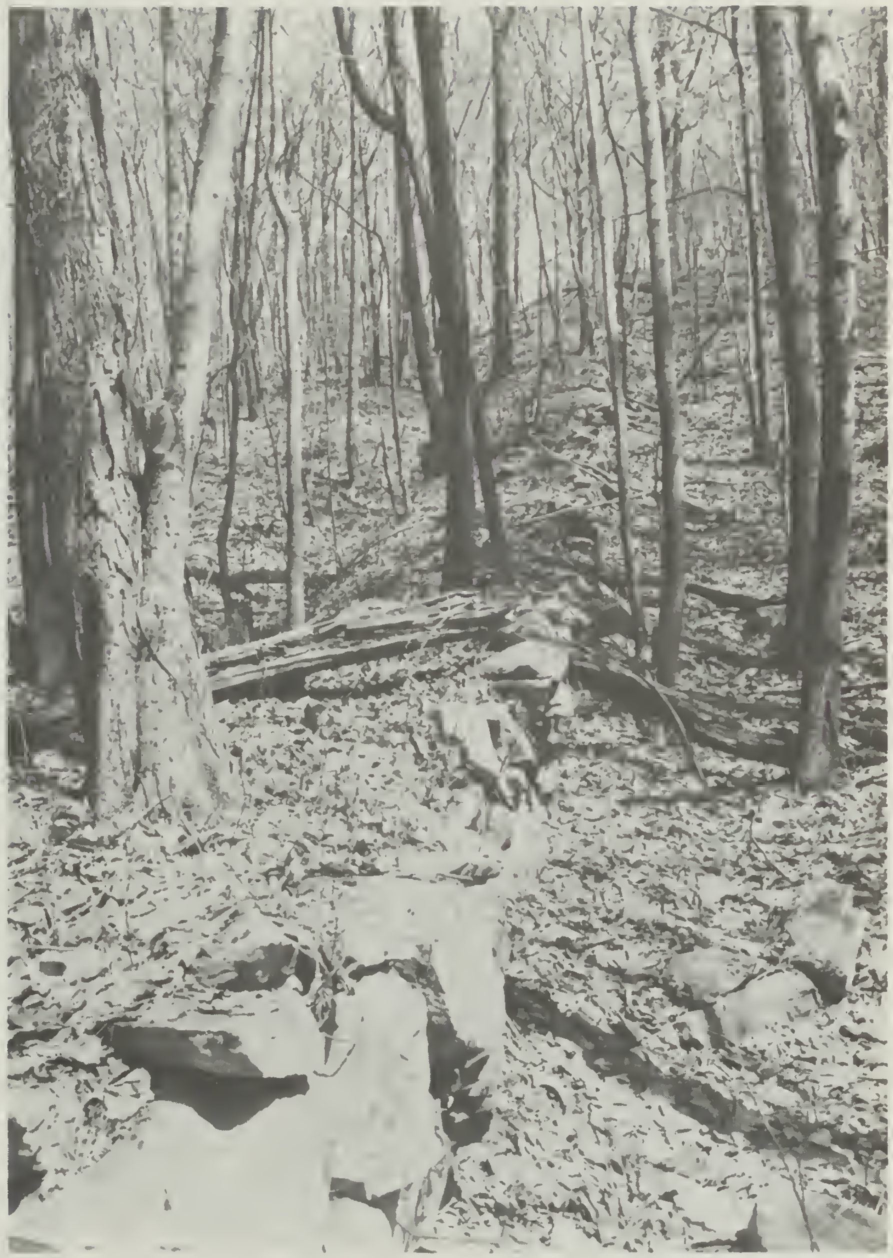


Figure 5.26 Exterior Fort, north breastwork, looking east along the upper slope. Note stone retaining wall along south side of breastwork.

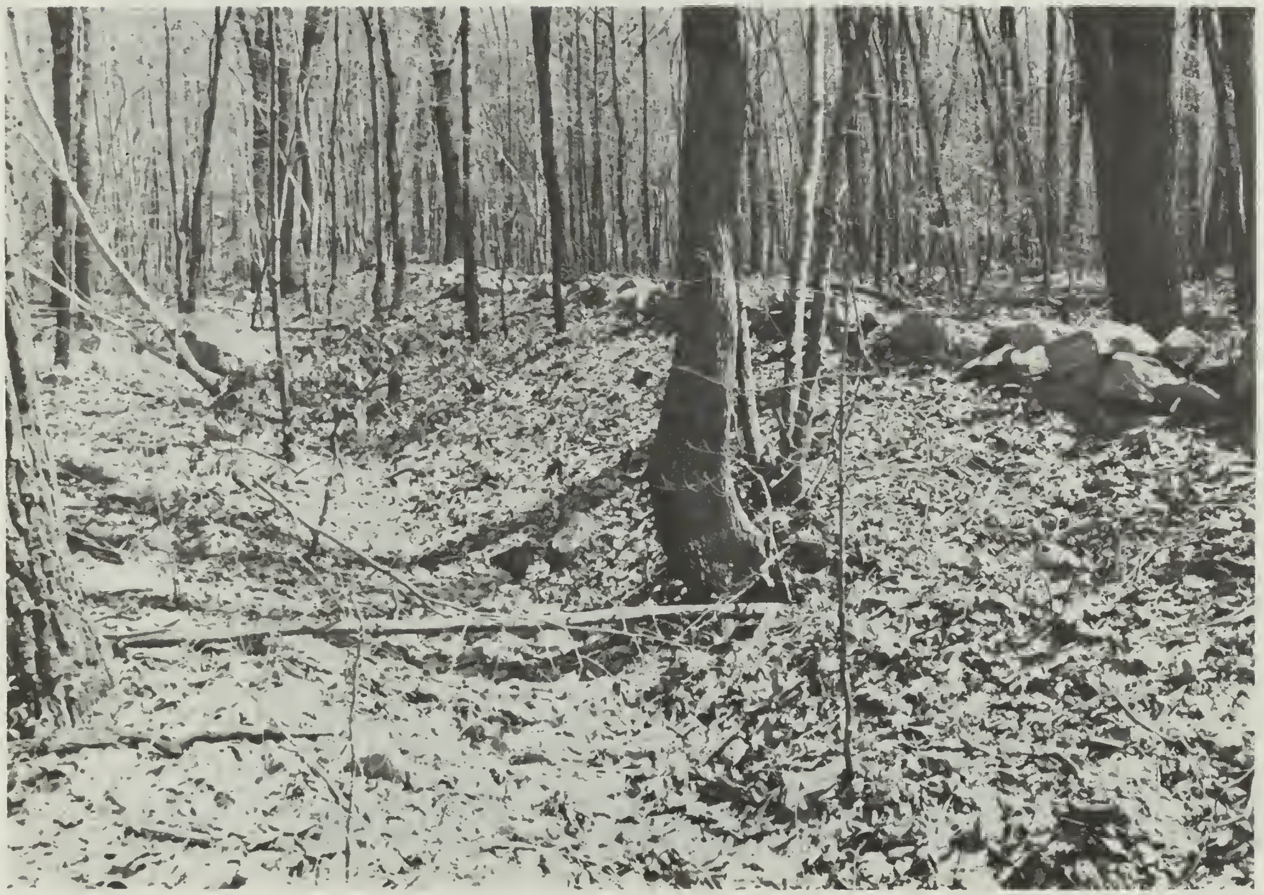
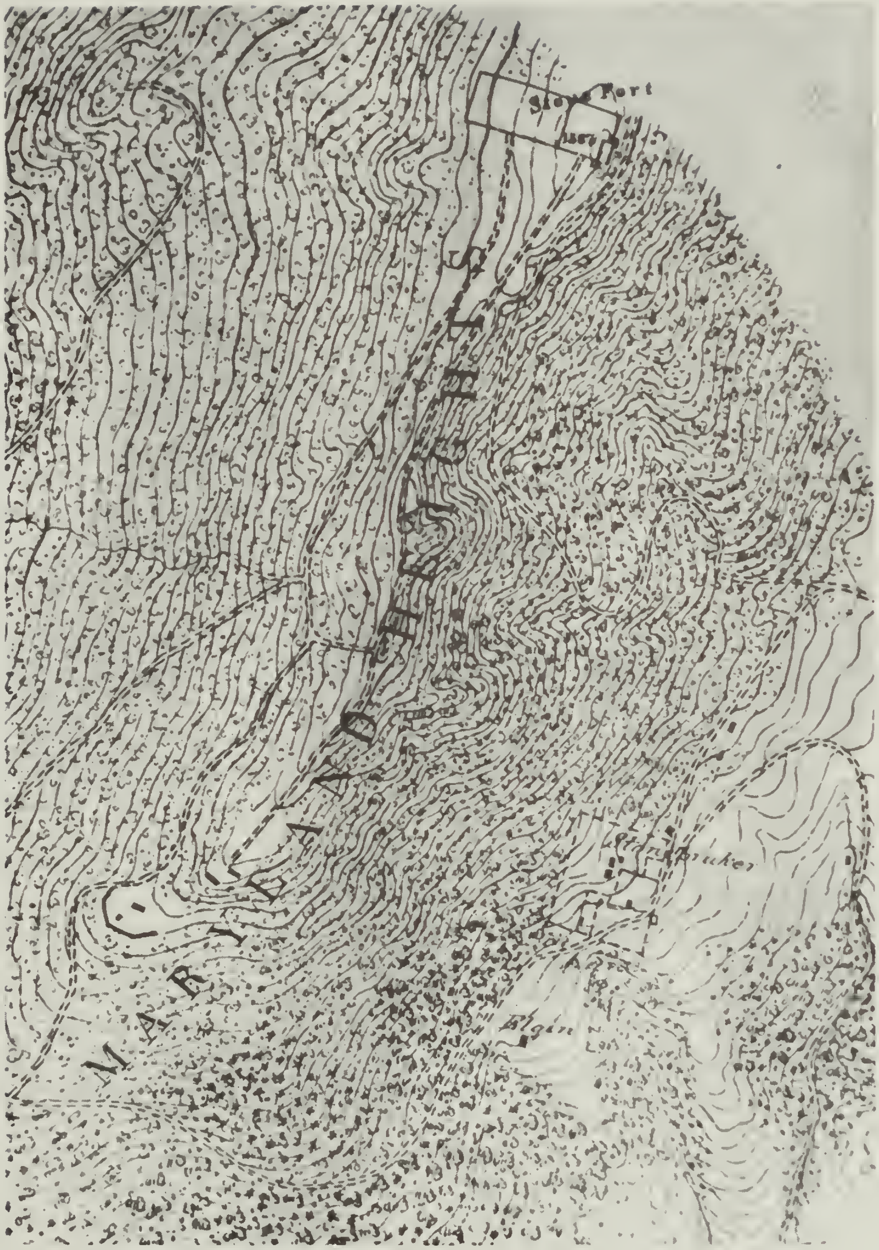


Figure 5.27 Exterior Fort. North side of north breastwork, looking east-southeast along plateau. Note shallow ditch at base of breastwork, and ridge of stone along top edge.


Stone Fort
MARYLAND HEIGHTS
Brucker
Elgin

Detail of 1865 Donn map of defenses on
Maryland Heights. North toward top of map.
(Harpers Ferry NHP)

Figure 5.28

Along the west edge of the platform lies a dry-laid stone retaining wall that stands 3.5 ft at its highest point. The earth-and-stone fill behind this wall slopes up to the top of the platform. In contrast, exposed bedrock ledges support most of the east side of the platform. A small, battered stone retaining wall fills a gap between the outcroppings.

An earthen ramp, constructed of rock and earth fill, extends south from the platform to the level plateau below (Figure 5.29). On its west side, the ramp is bolstered by the continuation of the retaining wall which supports the platform. This retaining wall splays outward near the base of the incline.

A straight, low-lying stone alignment defines the east edge of the ramp. This alignment ends at the northwest corner of a rectangular, dry-laid stone foundation with interior dimensions of 15 x 9 ft. The walls of this structure are constructed of crudely-coursed fieldstones and vary from 2.5 to three feet in thickness. The east wall originally may have been battered or stepped, as the ground drops precipitously to the east. In the southwest corner of the foundation lies a narrow entryway that opens toward the west onto the base of the ramp.

A short distance southeast of the stone foundation, an eroded, shallow, rectangular trench cuts into the slope just below the edge of the plateau (this trench lies outside the map area). Constructed halfway between the foundation and a stone outcropping along the east edge of the plateau, this trench measures about seven feet long and three feet wide. A small mound of stone rubble lines the steep, downhill side of the trench.

On the south side of the stone foundation, the crest broadens into a level plateau. Near the west edge of this plateau sit two magazines, separated from each other by a narrow earthen partition. On the north side of this divide lies a large, roughly rectangular magazine (Magazine 1) measuring 35 x 20 ft. The nearly vertical sides of this magazine end in a narrow, linear trough approximately five feet below the present ground surface. No entrances are apparent into this magazine, and little evidence exists of a berm projecting above the surrounding grade.

Magazine 2 is square in configuration, with edges 20 ft across. The steep, short sides end in a square, flat base that also lies five feet below the surrounding ground surface. A slight berm defines the south side of the magazine; again, no evidence exists for an entryway into this magazine.

About ten feet west of the two magazines lies a substantial concentration of stone rubble. Two small stone piles anchor the southern end of this concentration. These piles lie a short distance from the southwest corner of the smaller magazine, and perch on the edge of the plateau. Behind the larger, and better-defined, southernmost mound sits a shallow trench measuring 6 x 3.5 ft that closely resembles the trench located on the north edge of the plateau.

South of the magazines, along the west edge of the plateau, sits a level earth-and-rubble fill platform (Figure 5.30). The ruins of a low-lying,

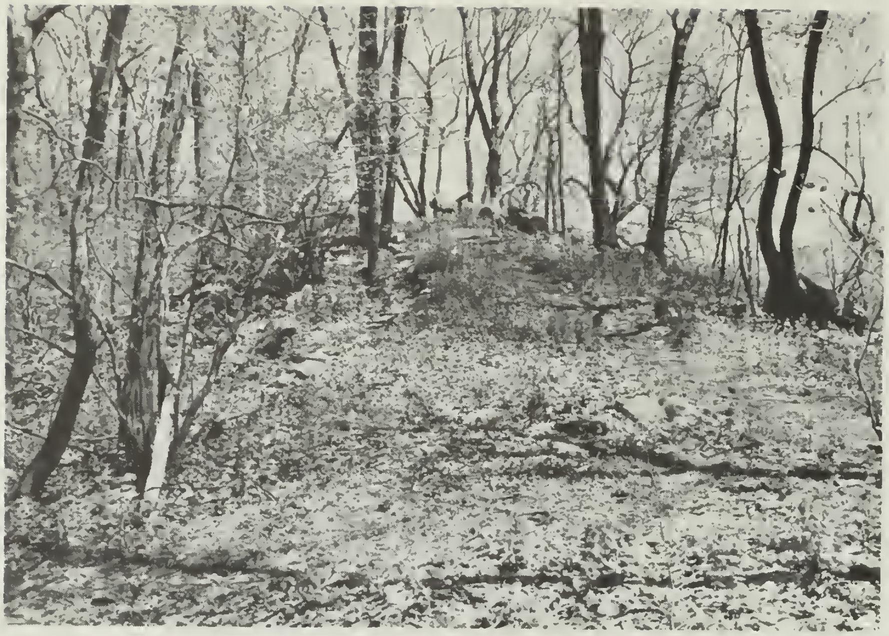


Figure 5.29 100-pounder Battery. Ramp from plateau to 100-pounder platform, looking northeast. Note curved retaining wall along left side of photograph.

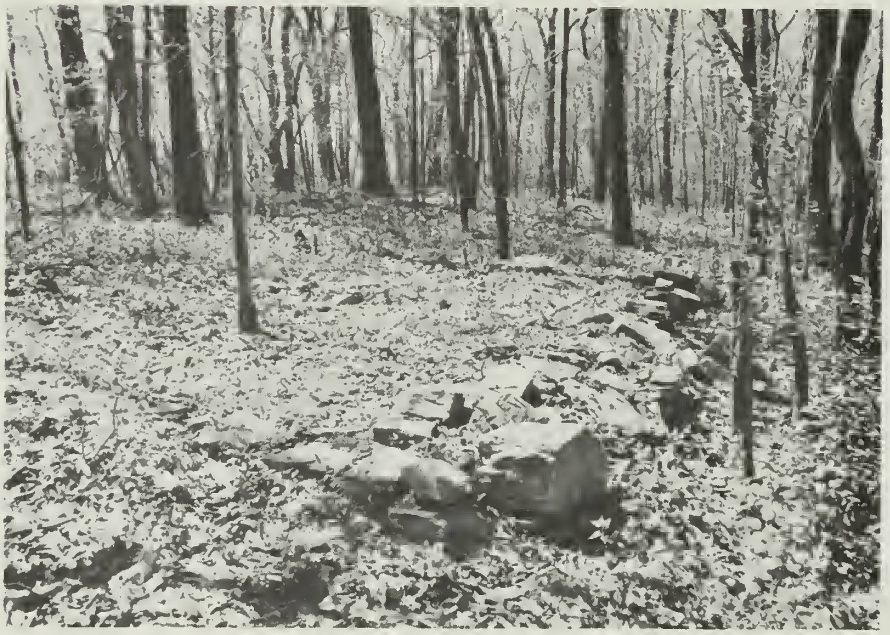


Figure 5.30 100-pounder Battery. Platform at the edge of plateau, looking south.

dry-laid stone retaining wall about 2.8 ft wide support the west side of this platform. This wall appears finished along both its east and west faces, although platform fill obscures most of the east face. Two stone alignments, both ten feet in length, mark the northern and southern edges of the built-up platform. The open back, or east, side of the platform blends into the natural slope.

This platform may delineate the southern extent of the 100-pounder Battery. Beyond this point the plateau continues for a short distance before again narrowing into the rocky outcroppings that define the crest north of the battery. A small campground (mapped as Campground Area 7) occupies the ground between the 100-pounder Battery and the southern end of the plateau.

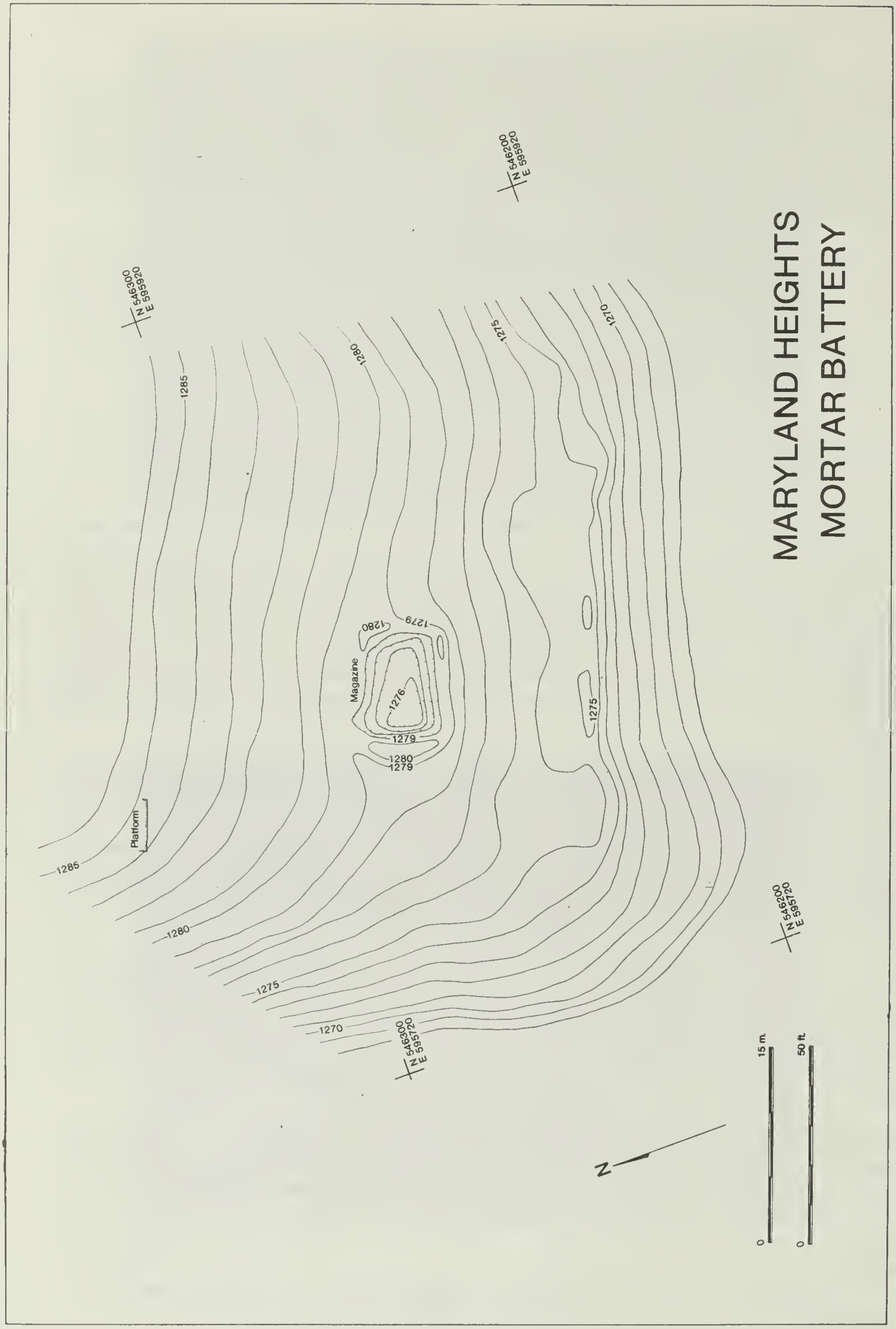
Mortar Battery

About halfway between the 100-pounder Battery and the 30-pounder Battery lies a small, fortified position identified in the historical records as a mortar battery (Figure 5.13). This defensive work sits on the mountain crest at the southern edge of a narrow plateau which extends northward to Campground Area 7. Below the Mortar Battery, the ground descends steeply toward the south. Along the west side of the fortification is a short, steep drop that ends at yet another narrow plateau, upon which the 30-pounder Battery and its associated campground (Campground Area 9) are located.

A low-lying, crudely-constructed earthwork of rubble and earth comprises the main defensive position at the Mortar Battery (Figure 5.31). This north-facing earthwork begins at the edge of the steep drop-off to the west and extends eastward for about 130 ft before trailing into a short alignment of large stones. The interior slope of the parapet is extremely shallow; the exterior side presents a more formidable appearance from the slope below the battery.

On the interior, east end of the earthwork lies an ephemeral platform slightly cut into the slope around it. Near the west end of the battery is a second ephemeral, artificially-leveled space. Although erosion has created shallow cuts in the earthwork, no embrasures appear to have been constructed at this battery; the slight interior slope most likely rendered them unnecessary.

Approximately 30 ft north of the main earthwork sits a rectangular magazine with dimensions of 30 x 20 ft. Well-defined berms project above the ground surface along the west and south sides of the magazine, while a very small berm defines the east edge. In the northwest corner is an entrance that opens toward the north. The sides of the magazine slope down gradually onto a level, rectangular base. The west end of the magazine, which lies adjacent to the entryway, is slightly deeper than the main part of the magazine (about three feet below the surrounding ground surface).


MARYLAND HEIGHTS
MORTAR BATTERY

N 546300
E 595920
N 546200
E 595920
N 546200
E 595720
N 546300
E 595720
1285
1280
1275
1270
1279
1276
Magazine
Platform
N
0
15 m
0
50 ft

Figure 5.31

Northwest of the magazine lies a small, earth-and-rubble filled platform. The remnants of a dry-laid stone alignment/retaining wall define the south edge of this built-up surface. This wall is constructed of small, faced fieldstones and extends 13 ft in length. The level platform blends with the natural slope along its east and west sides. Unfortunately, erosion has obscured definition of this feature.

Just below the east edge of the mountain crest, about 200 ft east of the main battery, perches a small, rounded platform with a sweeping view of the lower end of Pleasant Valley and the Potomac River. This platform is substantially built-up along its downhill side and cuts into the slope along the other side. A low-lying, dry-laid stone retaining wall supports the east end. Due to its distance from the main battery, this platform appears on the fortification and campground area base map (Figure 5.13), but not on the Mortar Battery site plan.

30-pounder Battery (Six-gun Battery)

Similar to the Mortar Battery, the 30-pounder Battery sits at the end of a plateau. The east end of the battery anchors on the southern terminus of the quartzite ridge that forms much of the crest on Maryland Heights. From this outcropping the earthwork curves westward around the plateau edge, commanding a steep grade to the south and west. The open north side follows a gradual ascent into Campground Area 9, which extends across much of the plateau directly behind the battery.

A four-sided earthwork forms the predominant feature in the 30-pounder Battery (Figure 5.32). The two long mid-sections face in a general southerly direction. Two shorter sides cover the flanks on each end. The relatively-flat parapet ranges from eight to ten feet in width along the rampart. No embrasures cut through the parapet. The Maryland Heights hiking trail crosses over the earthwork near its center, and has caused severe erosion at that point. A wooden ramp now carries the trail over the earthwork.

The exterior slope of the rampart is steep and uniform on all four sides, and extends to the base of a well-defined ditch that stretches the entire length of the rampart (Figure 5.33). The relief, or vertical distance from the parapet top to the base of the ditch, varies from 7.5 to 10.9 ft, and increases from east to west (Figures 5.34 and 5.35). The exterior slope of the ditch is shallow, but still quite evident. A slight glacis defines the top, outer edge of the ditch, and the outer extent of the fortification.

At the base of the glacis along the west half of the 30-pounder Battery is a road trace (Road QQ) that first appears at the extreme west end of the battery. The road parallels the earthwork to the midpoint of the fortification, then turns downhill (Figure 5.13). On the downslope edge of the road is a linear stone concentration which follows the road for much of its length around the battery. This low-lying stone concentration averages about 18 ft in width.

About 20 ft beyond the west end of the rampart lie two stone concentrations. The one closest to the rampart consists of an irregularly-shaped rubble mound that trails downhill. Two lines of stone extend from each end of the mound and flank a level, cut-out area open on its uphill side. Between this feature and the earthwork is a possible passageway into the 30-pounder Battery. The second feature is a smaller, rounded stone pile, shaped like a horseshoe, with a relatively stone-free interior.

The east edge of the earthwork terminates in a rounded, circular configuration of stones which compresses into a low, crudely-constructed and dry-laid retaining wall. Two rough lines of stone, six feet apart, extend eastward from the end of the rampart. The north alignment is the less defined of the two and ends about 15 ft from the edge of the earthwork, near the base of a steep incline leading to the south end of the crest. The south line of stone is slightly more than six feet wide, but narrows toward the east and continues up the slope as a well-defined stone breastwork about 1.5 ft in height.

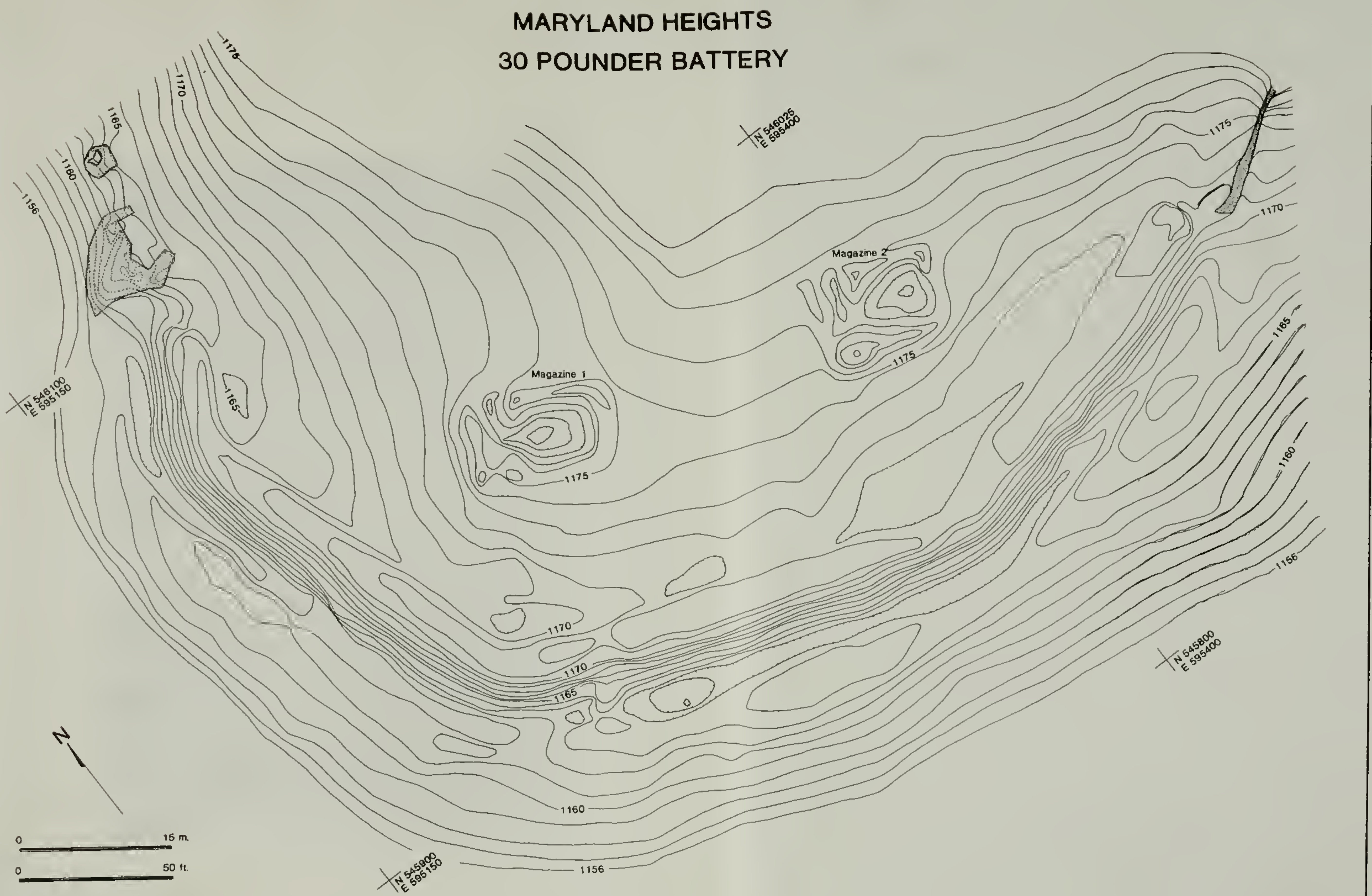
The interior of the 30-pounder Battery gradually slopes from north to south, toward the main earthwork. Two magazines are located within this area. Magazine 1 lies almost directly behind the apex of the rampart. This rectangular magazine (40 x 25 ft) has a north-facing entrance in the northwest corner. A shallow, earthen partition separates the entryway, which occupies the westernmost quarter of the magazine, from the main storage area. A gap in the center of the partition probably allowed access between the two compartments. With the exception of the entrance, a substantial berm surrounds the magazine. The steep sides of the magazine drop to a relatively level base five feet below the present ground surface.

Magazine 2 sits east of the first magazine, behind the salient angle created by the two eastern sections of the rampart. It is the same size as Magazine 1--about 40 x 25 ft--and similar in configuration, with an entrance in the northwest corner and a passage separated from the main compartment by an earthen partition. The berm of Magazine 2 is very uneven, however, and stands highest along the south side of the magazine. The deepest point of its base lies about four feet below the surrounding ground surface.

Naval Battery

The central feature of the Naval Battery is a small, three-sided earthwork located along the south end of Maryland Heights, on a slope overlooking Harpers Ferry (Figure 5.13). Behind this battery the ground ascends rather steeply to Road U. Below the earthwork the ground drops rapidly toward Harpers Ferry Road. On the east and north sides of the Naval Battery sits Campground Area 13. To the west lies a short, steep descent to a relatively broad plateau.

1156
N 5461
E 595
0
0



MARYLAND HEIGHTS
30 POUNDER BATTERY

1175
1170
1165
1160
1156
N 546025
E 595400
1175
1170
Magazine 2
1175
1185
Magazine 1
1165
1175
N 546100
E 595150
1160
1170
1170
1165
1156
N 545800
E 595400
N
0
15 m.
0
50 ft.
1160
1156
N 545900
E 595150

Figure 5.32

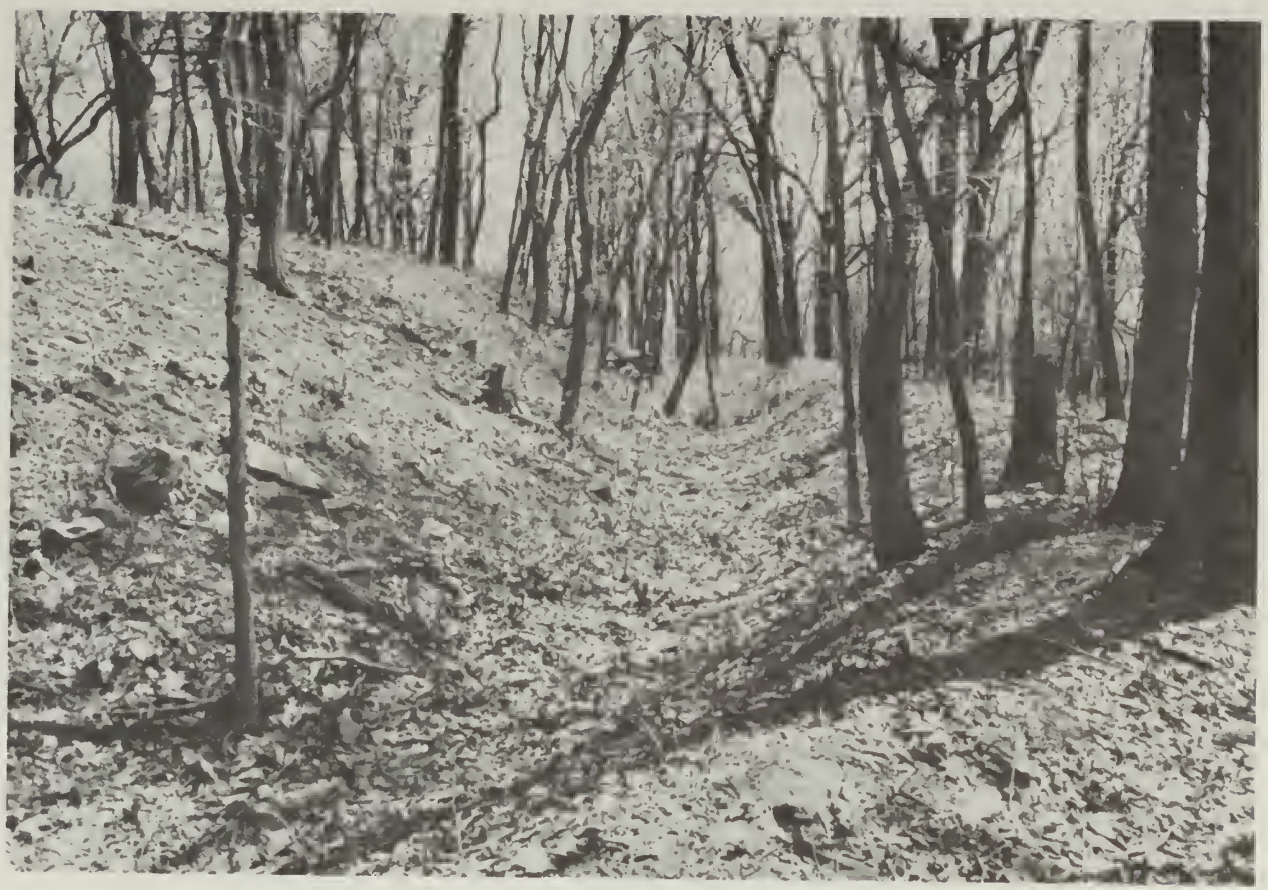


Figure 5.33 30-pounder Battery. Exterior side of rampart, looking east from eroded trail cut. Note ditch in center and glacis to right.

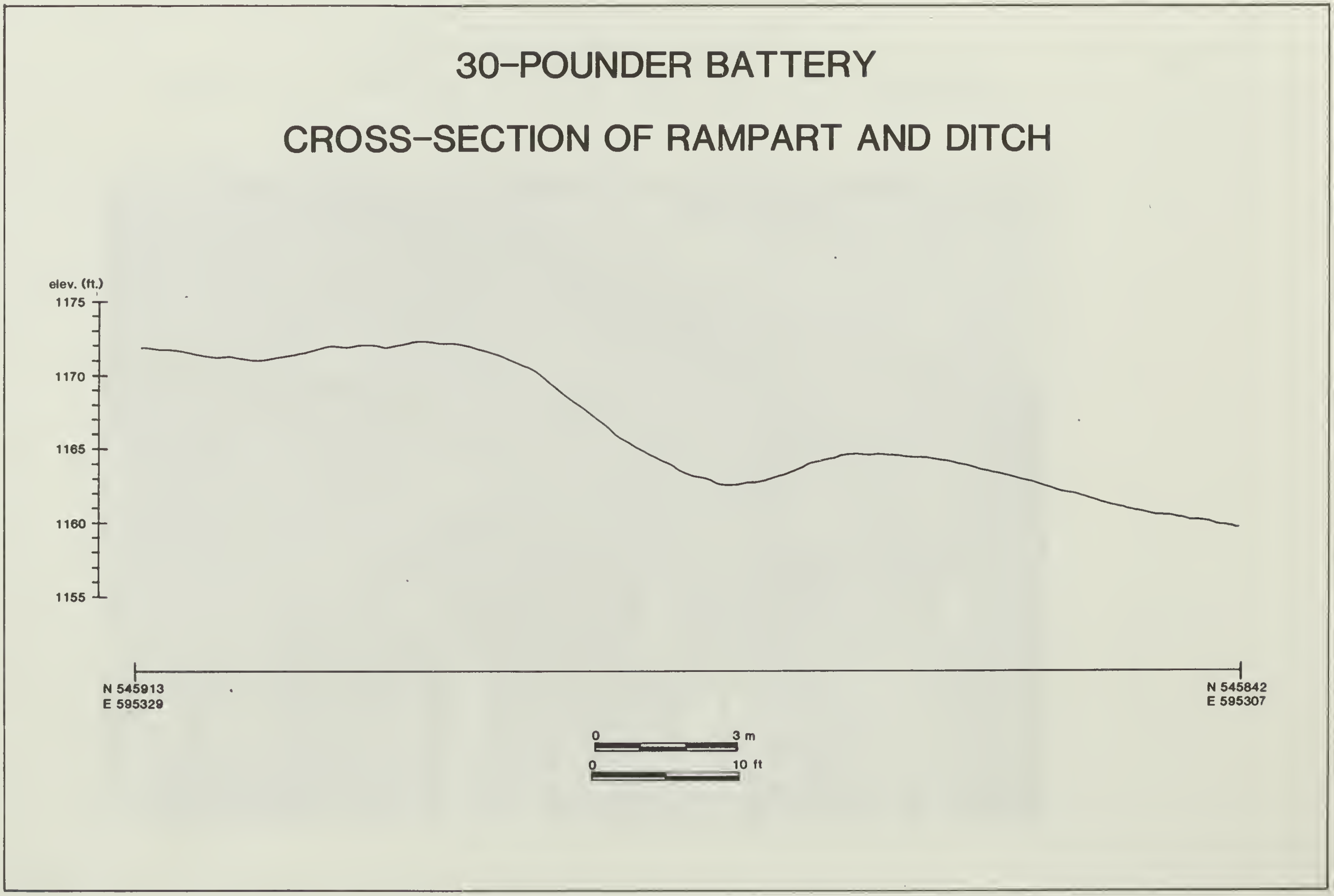


Figure 5.34 30-pounder Battery. Cross-section of ditch and rampart along east half of fortification.

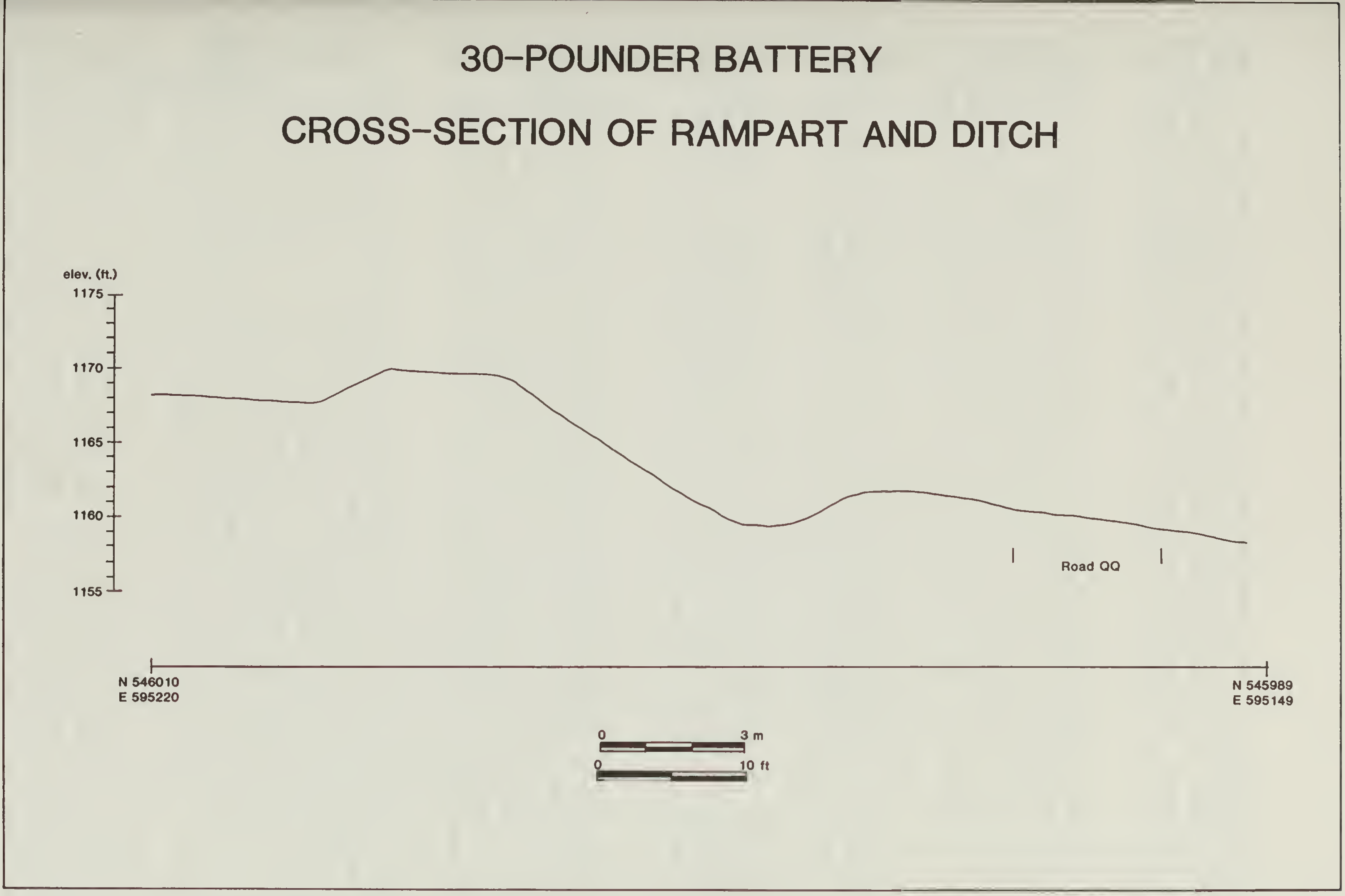


Figure 5.35 30-pounder Battery. Cross-section of ditch and rampart along west half of fortification.

The orientation of the Naval Battery is skewed about 45 degrees to the cardinal directions. To prevent confusion in the description of this fortification, the directions used below have been simplified. Rather than using northeast to describe the back of the Naval Battery, north is substituted, as are east for southeast, south for southwest, and west for northwest.

The earthwork opens toward the north, or upslope (Figure 5.36). The center rampart extends 90 ft in length, and has three shallow embrasures cut into it. These embrasures are not evenly placed along the parapet, but group together in the west half about 15 ft apart from each other. Tucked in the south interior corner of the battery is a 20-foot square built-up, earthen platform (Platform 1) that dominates the level ground behind the earthwork.

A sharp, artificially-cut slope delimits the back, or north side of the fortification. The west rampart ties into this slope and obstructs access to the main battery from that direction. The east rampart, on the other hand, ends in a rounded incline that drops to a passageway between the defensive position and the campground area.

Two narrow, extended promontories, separated from the main fortification by shallow troughs, flank each side of the Naval Battery. The western prominence has eroded considerably due to the Maryland Heights hiking trail (now removed), and is not as large or defined as the one along the east edge.

A small, leveled platform marks the east boundary of the battery (Platform 2). This south-facing platform cuts into the bank on its north side. A short distance northwest of the earthwork sits a second, much larger platform (Platform 3). A semi-circular, low-lying earthwork extends around the front edge of this position. This earthwork has collapsed in the center. Remnants of a dry-laid stone wall support standing sections. At its maximum height, this wall stands 1.5 ft. Platform 3 faces southwest and sits on the edge of a slope.

A deep, narrow causeway cuts through the slope behind the Naval Battery. This passage provides the only access from the battery to Magazines 1 and 2, located on the slope behind the main earthwork. Although the two magazines differ in size (Magazine 1 is about 40 x 20 ft and Magazine 2, 25 x 15 ft), both have the same basic rectangular shape. Both magazines cut into the slope behind the battery, and thus are deeper along their northern ends. Along the south end of the magazines, ill-defined earthen partitions separate narrow entryways from the main storage areas. These entryways open to the west, and are protected on their downhill flanks by mounded earth.

In Magazine 1, a substantial berm lines the south half of the east and west sides, and the entire south side. The south end of the magazine is eroded heavily around the protective earthen mound, most likely by run-off flowing through the magazines during heavy storms. This erosion holds true for Magazine 2 as well, for it has filled in partially as a result of run-off from the slopes behind it. Magazine 2 has well-defined berms along

MAR

NA

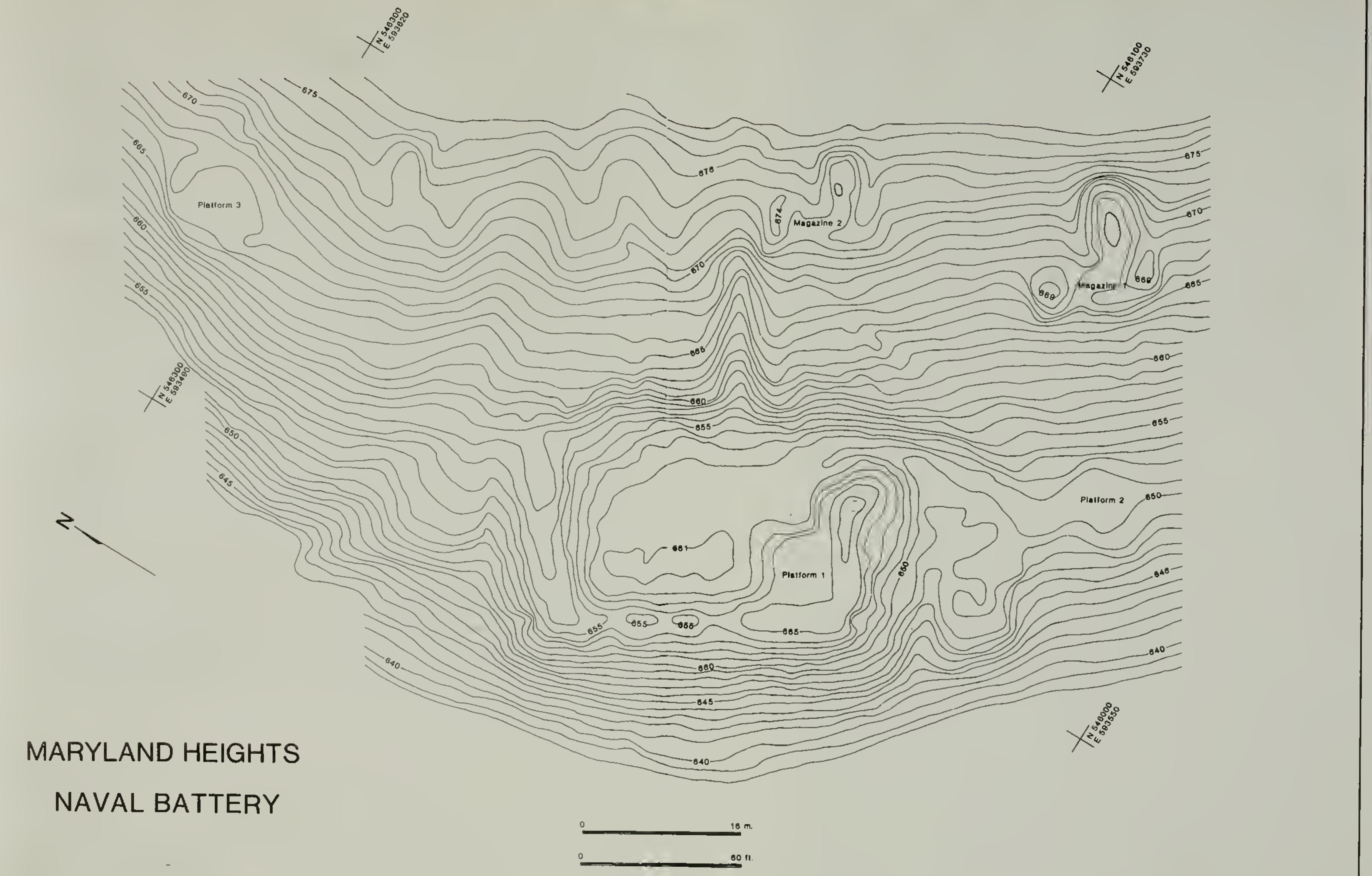

MARYLAND HEIGHTS
NAVAL BATTERY
N 546300
E 583820
N 546100
E 583730
N 546300
E 583460
N 546000
E 583550
N
Platform 3
Magazine 2
Magazine 1
Platform 1
Platform 2
675
670
665
660
655
650
645
640
676
674
669
661
0
18 m.
0
60 ft.

Figure 5.36

its east and south sides. The Maryland Heights hiking trail passes along the west edge of the magazine and has destroyed any possible remnants of a projecting ledge on that side.

Between Platform 2 and the causeway lies a possible third magazine. Unlike the other two, this feature lacks clear definition. It is rectangular in shape and cut into the hillside, leaving a shallow, open south end. Just beyond this opening is a small, leveled area flanked by two small, earthen mounds. No definable berm exists around the top edge of this depression.

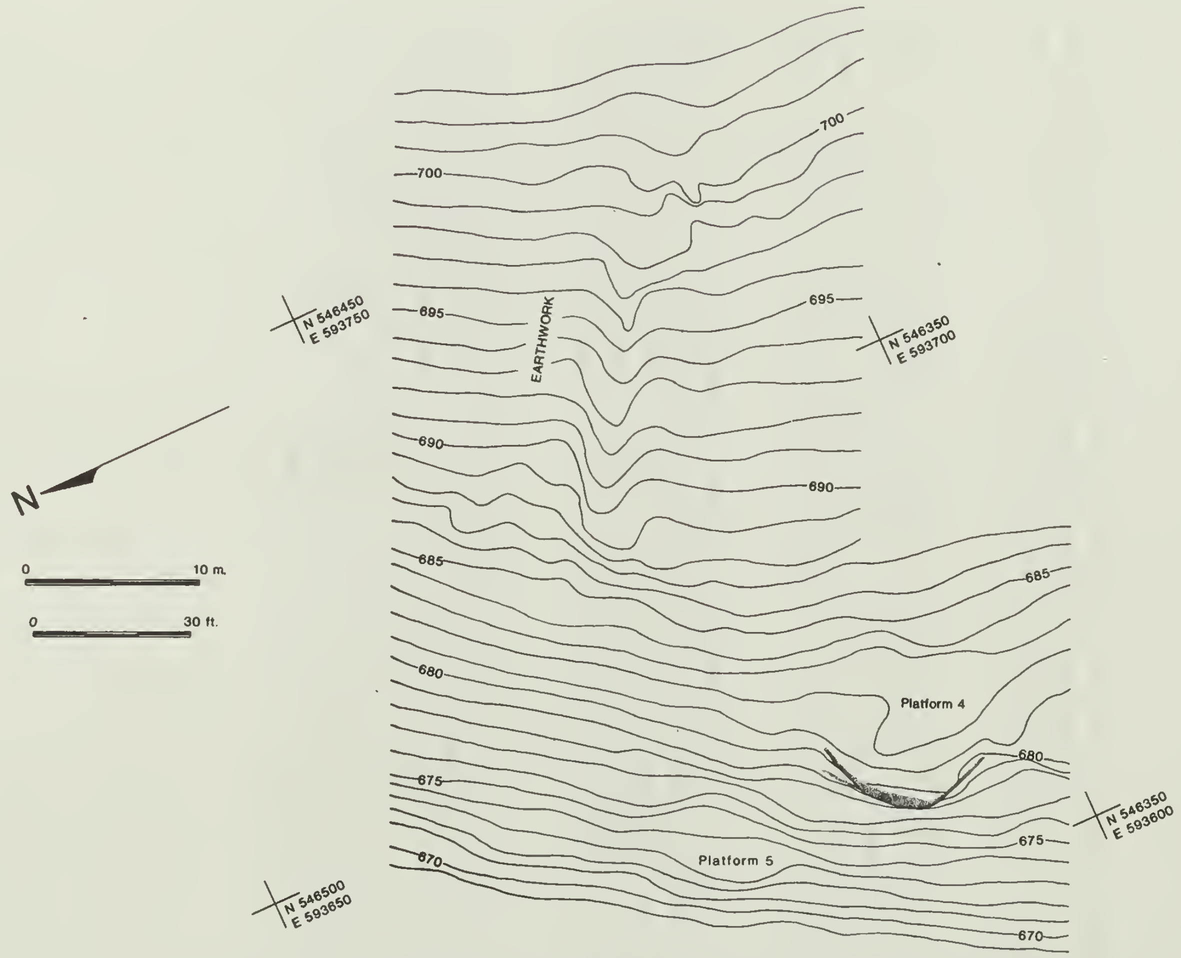
A major road trace (Road O) passes between the possible third magazine and the main battery. This road begins on the plateau below the west slope of the Naval Battery, extends up the slope past the northwest edge of the rampart, and turns up slope toward Road U (Figure 5.13).

Roughly 200 ft up slope (true northeast direction) from the Naval Battery sits a small, crudely-constructed earthwork (Figure 5.37). This northerly-facing defensive position is shaped like a staple, with a long side 60 ft in length and two short arms extending at right angles on each end. The fortification parallels a road trace (Road U1L3L) that extends toward Road U.

The low-lying rampart is composed of heaped stone covered with a thin mantle of soil. This earthwork extends down a relatively steep slope and is higher and better defined along its west end. Behind the rampart perch four poorly-defined platforms, one in each corner and two in the center. The downhill sides of the platforms are built-up to compensate for the steep slope.

Platform 4 cuts into the slope a short distance west of the small earthwork. This platform opens toward the west. It is bordered on its west edge by the remnants of a semi-circular, dry-laid stone retaining wall that stands as high as two feet in some areas. Below this platform lies a second, much smaller leveled platform (Platform 5) that appears to be constructed of stone fill with an earthen surface. This soil mantle has eroded on its downhill side, exposing the stone.

MARYLAND HEIGHTS


700
700
695
695
690
690
685
685
680
680
675
675
670
670
EARTHWORK
Platform 4
Platform 5
N 546450
E 593750
N 546350
E 593700
N 546350
E 593600
N 546500
E 593650
N
0
10 m.
0
30 ft.

SMALL EARTHWORK NORTH OF NAVAL BATTERY

Figure 5.37

INTERPRETATION OF FORTIFICATIONS

Stone Fort

Construction of the Stone Fort began near the end of October, 1862, and continued at least through February, 1863. Initial plans called for a structure measuring 156 x 44 ft, with bastions extending from the northeast and southwest corners. These plans subsequently were scaled down, as revealed both by the physical remains of the fortification and a June, 1863, description of the site by Col. William F. Raynolds.

While the width of the main foundation basically remained the same--45.5 ft as compared to the 44 ft suggested by original designer engineer Lt. Charles Suter--the length was cut by slightly more than one-third, from 156 to 100 ft. Although not precisely matching the archeologically recorded dimensions, Raynolds' measurements of 100 x 40 ft also reflect this decrease in scale.

Changes also occurred in the construction of the two stone bastions. The northeast bastion, originally planned with interior dimensions of 16.5 x 10 ft, was enlarged to 28 x 15 ft along its inside edges. The size of the southwest bastion increased as well, from 17 x 14.6 to 20.5 x 18.5 ft. Thus, while the planned dimensions of the main foundation were reduced during construction, the two bastions received greater prominence.

Unfortunately, no explanation for the modifications to Suter's plans has been discovered. Perhaps the longer length from north to south in Suter's design proved superfluous for an effective defense against attack from the north. In addition, the difficulty of building on the narrow crest may have influenced decisions concerning actual construction.

Suter's sketch shows the width of the west wall measuring 4.5 ft (Figure 5.1). This dimension matches the archeologically recorded thickness of that wall. The east and south walls also share the 4.5 ft width. The north wall, however, is a much broader eight feet across. These measurements compare favorably to the range of 4.5 to seven feet that Raynolds notes in June, 1863.

The walls of the two bastions contrast greatly in thickness. In the southwest bastion, the walls measure four to five feet wide. Walls in the northeast bastion, on the other hand, are a massive six to ten feet thick.

Defensive requirements probably explain the differences in width between walls in the main foundation and between the two bastions. The thickest walls are located at the north end of the Stone Fort--at the point where attack was considered most likely. Suter's design originally planned for all walls to be a uniform 4.5 ft in width, but the subsequent alterations strengthened the defensive capabilities of the northern side of the fortification. Suter's plans also called for a southwest bastion larger than the bastion in the northeast corner. Again, defensive requirements necessitated a reversal of the original specifications.

George Kaiser's map from January, 1863, depicts openings in the north and south walls of the Stone Fort (Figure 5.2). The present ruins of the fortification reveal no breaks in the north, east or west walls (Figure 5.15). In addition, the Chase stereograph of the 1870s displays no openings in the north or west walls (Figure 5.4). The main entrance most likely passed through the south wall, little of which remains today.

In Suter's plan for the Fort, entry into the two bastions from the main fortification occurred through three-foot wide openings. This specification received no alteration during construction, and these entryways remain evident today.

The 1870s Chase stereograph reveals the walls of the Stone Fort standing substantially higher than at present, particularly along the west side. In addition, the foundation appears complete in the picture, with capping stones covering the walls. In contrast, the north face of the north wall now stands four feet at its highest point, while the west wall has collapsed along the side recorded by the camera.

Although the stone foundation of the fortification apparently was completed, a blockhouse superstructure never was constructed. During the last two weeks of June, 1863, Colonel Raynolds ordered temporary gun emplacements erected in the Fort. By fall of 1863, the Stone Fort had transformed into a storage area for commissary supplies. A wooden platform and covering apparently protected these supplies. The Fort probably remained a storage area until the end of the War.

In summary, the Stone Fort, although constructed as the "citadel" in an encompassing ring of fortifications around Harpers Ferry, never reached completion and only briefly saw use as a defensive position.

Interior Fort

In the winter of 1862-1863, two parallel defensive lines were constructed, extending from the Stone Fort to a steep drop-off on the west slope of Maryland Heights. Today, in their final form, these lines enclose two fortifications, the Interior Fort and the Exterior Fort.

The lines constructed that winter occupy the same positions as the present-day ruins of the Interior and Exterior Forts. Evidence supporting this contention appears on the January, 1863, Kaiser map, which depicts two parallel defensive works--the southern line extends from the north wall of the southwest bastion of the Stone Fort, while the northern line begins a short distance north of the Fort on the crest (Figure 5.2). Unfortunately, no description of these lines is found until May, 1863, when General Barnard identifies them as a "double line of rifle-pits."

The Kaiser map also depicts five gun platforms against the south side of the eastern end of the northern defensive line. These artillery positions appear at or near the same location as five earthen platforms recorded in the Interior Fort. A magazine is pictured on the south side of the platforms, most likely the one recorded as Magazine 3. While the Kaiser map places two gun platforms on the west side of the magazine, three platforms presently sit west of the magazine in the Interior Fort (Figure 5.19).

Near the end of June, 1863, considerable improvements occurred on the northern defensive line in the area of the gun platforms. A parapet nine to ten feet high was constructed from the east edge of the crest to the west edge of the narrow, level plateau situated just below the Stone Fort. This parapet corresponds to the large earthwork that presently forms the north side of the Interior Fort (Figure 5.20).

The physical remains of the Interior Fort show a substantial ditch excavated on the north side of the parapet, a recommendation suggested by Barnard in his May, 1863, memorandum. The present fortification also reveals, in compliance with Raynolds' June, 1863, instructions, five embrasures cut into the parapet. Behind each embrasure sits a raised, earthen gun platform. These embrasures and platforms suggest only five guns were remounted in this area following completion of these improvements.

Both the January, 1863, Kaiser plan of the Stone Fort area and the 1865 Donn map illustrate a defensive line along the east edge of the crest Figures 5.2 and 5.6). This line extends from the northeast corner of the northeast bastion of the Stone Fort to the east end of the north line of the Interior Fort/Exterior Fort. Archeological evidence suggests this east defensive position may never have been very substantial, as remains today consist of a low-lying, linear rubble concentration.

About 80 feet west of the southwest bastion of the Stone Fort is a gap in the south breastwork of the Interior Fort. This entryway appears on the Kaiser plan, as well as on the 1863 Michler map and the later Donn map. Both the Kaiser and Donn maps depict a road from the south terminating at the entrance into the defensive work. The Michler map, on the other hand, shows the road continuing through the center of the fortification and past the north side. Today, no road trace is visible on either the south or north side of the entrance.

No documentation on construction dates for Magazines 1 and 2 has been uncovered. The only mention of these structures appears in a post-war report by General Ramsay which describes three magazines below the Stone Fort. Interestingly, Ramsay notes a spring issuing from one of these magazines. No evidence for such a spring, or for that matter any water in this vicinity, exists today. The Chase stereograph, taken less than a decade after the war, shows part of the mounded, earthen sides of Magazines 1 and 3 (Figure 5.4). The superstructure covering the two magazines either had been dismantled following cessation of hostilities or had collapsed within a few years.

The stereograph also captured a low stone wall behind Magazine 1. This wall corresponds to a linear stone concentration extending from the northeast corner of Magazine 2 to the interior slope of the north rampart. Only remnants of this wall remain today. The wall lies along the east edge of the plateau and may have defined the east side of the main area of the Interior Fort.

The substantial west breastwork of the Interior Fort appears on one map only, the Donn plan of 1865. Its date of construction remains unknown, as no mention is made of this defensive position occurs in any of the documentation. It may have been constructed in June, 1863, when other substantial improvements occurred at the Interior Fort. This breastworks allowed defenders to enfilade any enemy whom breached the north parapet of the Exterior Fort.

Exterior Fort

The Exterior Fort is defined by two essentially parallel breastworks extending down the steep west slope of Maryland Heights below the Interior Fort. The north line runs approximately 560 ft long, while the shorter south defensive work extends 520 ft. At the east end of the Exterior Fort the breastworks lie 220 ft apart, while near the western terminus about 255 ft separates the lines.

The core of each breastwork consists of a thick, dry-laid stone wall varying from four to five feet in width and two to three feet in height. In most places, a mounded, earthen embankment covers the north side of the breastworks. Along the base of each earthen embankment runs a shallow ditch. These earthen embankments provided protection for soldiers standing behind the works and firing toward the north.

As discussed above, construction of the Interior Fort/Exterior Fort commenced in the winter of 1862-1863. In May of 1863, General Barnard described these works as a "double line of rifle-pits." While documentary evidence indicates alterations occurred to the rifle-pits in the area of the Interior Fort, no mention exists of modifications along the lines of the Exterior Fort. The present breastworks possibly represent the same rifle-pits discussed in the historical documentation. Evidence for this appears on the January, 1863, Kaiser map which depicts this defensive position as two solid lines, thus suggesting something more substantial than scattered and independent rifle-pits (Figure 5.2). Without the benefit of additional documentation, however, it remains a possibility that extensive modifications improved these lines in June, 1863; yet even as late as August of that year, the defensive works still were described as rifle-pits.

It remains unknown whether the defensive lines constructed in the winter of 1862-1863 extended the full length of the present breastworks. Crude measurements from Kaiser's map, which combine both the Interior and Exterior Forts, fall short 150 to 200 ft, but the accuracy of the scale on Kaiser's drawing remains questionable. Other evidence suggests the original lines may have been shorter. In a report dated from May, 1863, General John G. Barnard recommended extending the rifle-pits to a point so steep that the position could not be turned. Unfortunately, no documentation exists confirming whether or not the Federals implemented Barnard's recommendations. There can be no doubt, however, that the breastworks do indeed extend to "impracticable" ground--a 60 ft bluff on the mountain's western side.

A single entrance into the Exterior Fort cuts through the south breastwork. This entryway does not appear on the Kaiser or Michler maps from 1863, but it does show on the 1865 Donn map (Figure 5.6). In the latter plan, a road terminates at the entrance. During this study, archeological investigations discovered no road traces in association with the opening. In fact, the surrounding ground surface is extremely rocky, showing no signs of any kind of pathway.

About 20 ft south of the entryway stands a relatively large stone foundation, Feature CA2-F1, mapped as part of Campground Area 2. This feature effectively blocks the southern approach to the Exterior Fort and most likely functioned as a blockhouse guarding this entrance.

In addition to the road leading to the Exterior Fort, the Donn map also displays a line enclosing the west end of the fortification. No present evidence exists, however, for a defensive position along this side. Instead, it appears the Exterior Fort always remained open to the west.

Within the confines of the Exterior Fort exist the remains of a fairly substantial campground, mapped as Campground Area 12 (Figure 5.21). It seems unusual that soldiers billeted in the midst of a major defensive position guarding against attack from the north. This campground receives extensive discussion in Chapter 6.

100-pounder Battery

In June, 1863, Colonel Raynolds ordered a 9-inch Dahlgren gun from the Naval Battery mounted on the crest of Maryland Heights. At its new site, this formidable weapon had a 360-degree field of fire, rendering it one of the most important defensive positions on the mountain. A 100-pounder rifled Parrott replaced the Dahlgren within a couple of months.

A raised earthen platform on the north edge of the battery formed the base for the 100-pounder gun and its center-pintle carriage. The gun rotated on a circular iron runner about 11 ft in diameter. The present eroded remains of the platform base, constructed of fill enclosed by dry-laid stone retaining walls (Figure 5.28), measure 20 ft across and thus were large enough to support the 100-pounder and its carriage.

On the south side of the platform extends a ramp composed of earth and rock fill (Figure 5.29). This ramp certainly was constructed to facilitate transport of the 100-pounder to the top of the platform, and it also provided access to the gun from other areas of the battery. A stone foundation at the base of the ramp probably served as a guardhouse restricting such access.

About 70 ft south of the 100-pounder platform are two deep magazines. While historical documentation yields no dates of construction, these magazines probably were excavated before or shortly after the gun arrived. In fact, the spoil removed from the magazines conceivably may have been used in construction of the ramp and platform.

These magazines contrast with other Maryland Heights' magazines in several ways. First, both form well-defined rectangular excavations. Most of the other magazines on the mountain have experienced greater erosion, creating relatively circular berms with more-rounded bases. Better construction techniques or better compacting soils may have preserved the magazines at the 100-pounder Battery from the erosion which has veiled the original configuration of several of the other magazines.

A second feature which distinguishes these magazines is their end-to-end alignment. This arrangement suggests each excavation served as a chamber or compartment, with one side used for powder storage and the other for explosive shell storage only. One domed roof likely covered both compartments.

No apparent entry to either magazine defines the final characteristic of the 100-pounder Battery magazines. At other magazines on the mountain, a narrow trench sliced into the ground with flanking, mounded sidewalls identifies a magazine's entrance. No trench or sidewalls exist, however, at this site. If one roof covered both chambers, as postulated above, then perhaps an above-ground entrance provided access to the interior of the 100-pounder Battery magazine. Ladders then allowed access to each chamber.

A short distance south of the two magazines, on the west edge of the crest, appears a leveled platform supported by the ruins of a low-lying, dry-laid stone retaining wall. Across from this platform, on the opposite side of the crest, is a second platform (Feature CA7-F1) mapped as part of Campground Area 7. Although the historical documents are silent, these platforms may have functioned as gun emplacements for mortars or light howitzers.

Sharing the narrow ridgetop with the 100-pounder Battery is a small campground site designated as Campground Area 7. This campground is discussed in Chapter 6.

Mortar Battery

Little documentation exists for the Mortar Battery, a defensive position situated on the crest between the 100-pounder Battery and the 30-pounder Battery. Constructed sometime prior to December, 1863, the site presently consists of a low-lying, south-facing earthwork with a well-preserved magazine on its north side (Figure 5.31). No embrasures cut through the earthwork; however, two ephemeral platforms, most likely gun emplacements, are definable behind the low rampart.

About 60 ft northwest of the magazine sits a small leveled platform defined by a dry-laid stone retaining wall along its south side. A second, more substantial platform lies roughly 200 ft east of the main battery and overlooks the lower end of Pleasant Valley. Both of these features probably represent mortar emplacements. Combined with the two ephemeral platforms alongside the earthwork, it appears the Mortar Battery held four or more guns--perhaps the two 24-pounder Coehorn mortars and two 10-inch siege mortars listed in General Ramsay's report of July, 1865, under the 30-pounder Battery.

The 1865 Donn Map shows two long, narrow rectangles at the site of the Mortar Battery (Figure 5.6). The longer of the two, located at the south edge of the crest, probably represents the low-lying earthwork. The second rectangle appears at the end of a road leading to the battery. No traces of any structures or earthworks were found at this location. The road was mapped as Road RR.

30-pounder Battery (Six-gun Battery)

Construction of the 30-pounder Battery, also known historically as the Six-gun Battery, began shortly after the Federal reoccupation of Maryland Heights following the Battle of Antietam. Evidence supporting this assertion appears on a map dating from October, 1862, which depicts this battery at its present location. A detailed rendition of the fortification from the January, 1863, Kaiser map reveals its completion by that date (Figure 5.9).

The Kaiser map also reveals that the 30-pounder Battery has retained its original configuration. A comparison of this historical plan with the archeological remains confirms this observation (Figure 5.32). From the outset, the fortification consisted of a four-sided earthwork open to the north. While Kaiser's dimensions are slightly inaccurate, proportionally they match those recorded for the four sides during this survey. In addition, Kaiser shows the ditch extending along the entire exterior or south side of the rampart.

Kaiser's drawing also depicts five gun platforms scattered along the north side of the rampart. No earthen emplacements appear at these locations today or along any section of the earthwork. In addition, no embrasures cut through the rampart. Taken together, these two facts suggest the guns were mounted en barbette on carriages.

A hiking trail currently crosses the ditch and parapet at the location of an entryway shown on the Kaiser map near the center of the 30-pounder Battery earthwork. At present, an earthen ramp extends across the ditch connecting with an eroded passage through the parapet. This passage does not have the appearance of a defined entrance. The Kaiser map shows a roadway running south from the entrance which corresponds to Road QQ; however, this road trace today curves around the exterior west side of the fortification and does not extend up to the ramp.

Blocking the north side of the entrance in the Kaiser illustration is a large, rectangular structure. No above-ground traces of this building remains visible. It possibly functioned as a guardhouse, protecting the exposed entryway into the battery.

Two magazines appear on the Kaiser map. Both lie at the same location and in the same relative position to the rampart as the two magazines recorded archeologically.

The final illustration of the 30-pounder Battery is found on the John Donn map of 1865 (Figure 5.6). The characteristic shape of the parapet remains unaltered, with the area on its north side cleared of vegetation. In this cleared area sit two unidentified structures--one a small square behind the center salient angle of the parapet, and the other a long, rectangular structure. The function of these possible buildings remains obscure, although documents reveal both a guardhouse and cookhouse at the battery as early as late 1862.

The Donn map (1865) shows a road extending from the south and curving around the west end of the 30-pounder Battery. This matches the present configuration of Road QQ. The road on Donn's map then continues toward the north, where it was mapped as Road MM. No connection was discovered between Roads QQ and MM. More importantly, the Donn map suggests the entryway through the parapet, shown on the earlier Kaiser map, was no longer in use by the end of the war. Today, the physical evidence of the ramp across the ditch, as well as the eroded cut through the parapet, implies this entrance may not have been obliterated totally.

Naval Battery

Of all the fortifications on Maryland Heights, the Naval Battery experienced the most radical changes in its physical appearance. Initially constructed in late May, 1862, this battery also represents the first permanent field fortification on Maryland Heights.

Three Dahlgren guns (two 9-inch guns and a 50-pounder) originally comprised this battery. One account reports these guns set upon "a broad platform like a shipdeck." Another witness states one rod (or 16.5 ft) separated each of the guns, which suggests an individual platform for each gun. An August, 1862, photograph showing the southwest slope of Maryland Heights reveals a cleared, manmade leveled area at the site of the Naval Battery, but no guns or separate platforms distinctly appear in the photo (Figure 5.10). Neither does the photograph clearly show breastworks protecting these guns.

Numerous platforms exist east and west of the battery today, but because of extensive improvements at the battery--including the addition of more platforms in the fall of 1862--it remains impossible to determine which three platforms represent the original gun positions.

The Kaiser map of January, 1863, provides a clear illustration of the Naval Battery as it appeared four months after the siege and capture in September, 1862 (Figure 5.11). Seven circular platforms define the positions for the seven guns in place at that time. Several of these platforms remain evident today. Platforms 2 and 3 in the topographic plan view of the Naval Battery surely represent part of this early defensive work (Figure 5.36). Superimposing the Kaiser map over the present-day plan, it becomes apparent that Platform 2 is the second platform from the right in the Kaiser illustration, and that Platform 3 is identical to the second from the left. Platform 4, shown on the archeological map of the small earthwork above the Naval Battery (Figure 5.37), represents the platform on the far left. In addition, the two narrow promontories flanking each side of the present earthwork also may be remnants of gun platforms. Sandbag ramparts protected these platforms, hence no breastwork remains at these sites today.

The four magazines Kaiser depicts were constructed at the end of September, 1862, shortly after the Confederate capture of Harpers Ferry. Two of these magazines remain well-defined to the present day. Magazine 1 corresponds to the magazine Kaiser shows at the far right--both have their entrances in the northwest corner. Magazine 2 represents the southernmost magazine in an alignment of three. The entrance of this magazine has been altered, however, as the historical drawing shows it in the southwest corner, whereas presently it lies in the northwest corner.

The other two magazines have left few visible traces. Between Magazine 2 and Platform 3 are two indistinct ground anomalies cut into the slope representing all that remain of the two holes. These two magazines probably were removed before the end of the war, perhaps during construction of the main earthwork.

No documentation exists for construction of the present, three-sided earthwork which covers the center three platforms. The builders obviously designed this defensive position to hold four guns. Three shallow embrasures cut into the north half of the center rampart, and a large earthen platform tucks into the south interior corner of the fortification.

Construction of the earthwork at the Naval Battery probably occurred in June or July, 1863. Substantial improvements on most other Maryland Heights defenses occurred during the final two weeks of June, 1863, as Colonel Raynolds prepared the position for an expected Confederate advance.

Although Raynolds removed two large guns from the Naval Battery in mid-June (one 9-inch Dahlgren to the 100-pounder Battery and a 50-pounder gun to the Spur Battery), at least three guns remained behind according to Col. P. A. Porter, whose 8th New York Heavy Artillery occupied the Naval Battery in mid-July, 1863. Raynolds probably ordered the earthworks built at the Naval Battery to protect these three guns--one 9-inch Dahlgren, one 24-pounder gun, and one 24-pounder howitzer. Since the battery is built for four guns, a fourth gun perhaps occupied this position prior to the June 30, 1863, evacuation. Then again, the earthwork may have protected four guns before Raynolds moved one elsewhere.

If Raynolds did not have the earthwork constructed, then sandbag ramparts protected this position prior to the June 30, 1863, evacuation. When the Federals abandoned the heights, they most likely destroyed these sandbag ramparts, compelling construction of the present breastworks by Colonel Porter's 8th New York Heavy Artillery following the mid-July, 1863, reoccupation of the mountain.

It remains doubtful whether any work occurred at the Naval Battery following July, 1863. General Barnard assigned "very little importance to this battery"; and his May, 1863, report recommended the Naval Battery's functions be transferred to the "spur on the left of where the Sharpsburg road [Harpers Ferry Road] turns off from the river." In compliance with Barnard's suggestion, Colonel Raynolds laid out Battery Sullivan on June 27, 1863. The Federals later completed this battery (although the date remains unknown); and throughout the final 21 months of the war, Battery Sullivan served as the primary defense guarding approaches along the Potomac River. During the final year of the war, the Naval Battery served as an ordnance depot.

About 200 ft northeast of the Naval Battery is a small, crudely-constructed earthwork facing in a general northerly direction (Figure 5.37). Behind the low-lying rampart are four poorly-defined platforms, one in each corner and two in the center. Federals under the command of Capt. Eugene McGrath, Company F, 5th New York Heavy Artillery, constructed this earthwork on September 12, 1862--one day before the Federals abandoned Maryland Heights during the siege of Harpers Ferry. Four 12-pounder light howitzers occupied this position, and each of the four platforms represents a gun emplacement.

Stone Breastworks East and South of the Stone Fort

In the second half of June, 1863, acting upon the suggestions of General Barnard, Colonel Raynolds ordered a line of stone breastworks constructed between the Stone Fort and the 100-pounder Battery to protect against attack up the east slope. Remnants of these breastworks remain evident along the east edge of the crest and upon the plateau below the Stone Fort on which Campground Area 5 is located.

Along the east edge of the crest, the breastworks are composed of Features CA6-F1 and CA4-F9 (Figure 5.13). Feature CA6-F1 extends from the north end of Campground Area 6 northward to the corner formed by Features CA2-F45 and CA4-F9. Feature CA4-F9 continues along the east edge, curving around the top of a ravine that provides the major approach to the crest from the east slope.

Below the crest, Feature CA4-F22 extends down slope from Feature CA4-F9, crosses Road H, and angles northward for a short distance before ending (Figure 5.13). This line reappears at Campground Area 5, with Features CA5-F1 and CA5-F27 extending along the east edge of that campground area.

Two charcoal hearths--Charcoal Hearth 8 in Campground Area 5 and Charcoal Hearth 37 in Campground Area 4--perch above the stone breastworks. Charcoal Hearth 37 lies above Feature CA4-F9, and Charcoal Hearth 8 above CA5-F27. Due to their commanding positions and ready-made level surfaces, it remains possible the Federals used these hearths as gun emplacements overlooking the east flank of the mountain.

SUMMARY AND CONCLUSION

The Federal army constructed eight fortifications upon Maryland Heights during 1862 and 1863. These defenses anchored the east side of a line of fortifications which paralleled the Potomac River north and west of Harpers Ferry. The defenses upon Maryland Heights, in conjunction with Fort Duncan and the Barnard Line to the west, formed a fortress which effectively protected Harpers Ferry from attack from the north. In addition, artillery on Maryland Heights--the highest ridge surrounding Harpers Ferry--dominated the region and made Harpers Ferry untenable to Confederate occupation.

Maryland Heights originally played only a partial role in the defense of Harpers Ferry. When sailors from the Washington Navy Yard planted a battery of naval guns on the mountain's southwest slope in late May, 1862, the Federals expected this battery to protect Harpers Ferry from the west by commanding Camp Hill and Bolivar Heights. The low elevation of the Naval Battery made it untenable, however, following the Confederate seizure of the crests of Maryland and Loudoun Heights during the investment of Harpers Ferry in September, 1862. One week after the Union surrender at Harpers Ferry on September 15, 1862, Northern troops again reoccupied Maryland Heights, with Union commander General McClellan declaring the permanent occupation of Harpers Ferry and Maryland Heights "a military necessity." To carry out McClellan's edict, construction of additional fortifications upon Maryland Heights began in the fall of 1862.

Work commenced in October, 1862, at the 30-pounder Battery (near the south end of Maryland Heights overlooking Harpers Ferry) and on a knoll one mile west of Maryland Heights at Fort Duncan. By November, 1862, construction had begun north of the Ferry at the Stone Fort and Interior Fort; and by

February, 1863, the adjoining Exterior Fort had neared completion. Engineers had placed these last three forts on the highest point of Maryland Heights (about one and one-half miles north of Harpers Ferry), and together they defended the crest from attack from the north.

In May, 1863, Brig. Gen. John G. Barnard, chief engineer of the defenses of Washington, identified deficiencies in the Maryland Heights defenses. Six weeks following Barnard's inspection, the Confederates launched an invasion across the Potomac. This threat forced the Federals to upgrade the Maryland Heights defenses immediately, and Col. William F. Raynolds, chief engineer of the 8th Corps, was detached to supervise all improvements. Raynolds rapidly implemented most of Barnard's recommendations, which included raising the north parapet of the Interior Fort; establishing the 100-pounder Battery; creating the Spur Battery; and lining the crest with stone wall infantry defenses. These improvements, along with the establishment of Battery Sullivan on a knoll northwest of Lock 34, made the Naval Battery obsolete.

Although not threatened by the Confederates, the Federals abandoned their defenses north of the Potomac on June 30, 1863. One week later, the bluecoats returned; and for the next two years, Union soldiers continuously occupied Maryland Heights. Few additions or improvements occurred on the fortifications after June, 1863, with one exception--sometime between the summer and fall of 1863, the Federals added a Mortar Battery on the crest of Maryland Heights.

During the first week of July, 1864, the Maryland Heights' defenses received their only test. Maj. Gen. Jubal Early's Confederate army corps crossed the Potomac at Shepherdstown and then moved south toward Maryland Heights. Early demonstrated against this position for two days (July 6-7); but when he discovered the Federals determined to stand behind defenses too strong to attack, Early maneuvered north of Maryland Heights and directed his army east toward Washington. Never again did Confederates threaten the "citadel of Harpers Ferry."

Without doubt, the most unique of the Maryland Heights defenses is the Stone Fort. No other Civil War field fortification in the United States resembles this extensive stone structure. Although originally designed as an infantry blockhouse guarding Maryland Heights' highest point, the Federals never constructed the superstructure over this massive foundation. By 1864, the garrison had transformed the Stone Fort into a commissary storage area--practical, but quite unfitting, for Maryland Heights' most imposing structure.

The north wall of the Interior Fort stands as the most imposing earthwork on Maryland Heights. The nine-foot high parapet and accompanying ditch (dry moat) defiantly defends the crest from attack from the north. With the exception of the west wall of the 30-pounder Battery (10.9 ft high), no other parapet on the mountain stands as high as the Interior Fort's north wall.

The five embrasures which cut through the north wall of the Interior Fort also distinguish this site. Only one other fortification on Maryland Heights has embrasures--the Naval Battery boasts three in its south wall.

Although the oldest battery on the mountain, the earthwork at the Naval Battery may be the youngest fortification on Maryland Heights. Its date of construction still remains unknown; but sandbags, and not earth, probably protected this position until mid-June, 1863. The parapet may have been erected during the Raynolds' improvements of late June, 1863, or perhaps after the Federal reoccupation in July, 1863. Only the low parapet at the Mortar Battery (date of construction unknown, but sometime in 1863) possibly postdates the Naval Battery fortification.

While the physical appearance of the Naval Battery changed most during the war, the 30-pounder Battery experienced the least modification. This four-sided earthwork with two midsections and two flanks maintained this configuration on every contemporary map; and unlike most other fortifications, neither Raynolds nor Barnard suggested any design improvements at this battery. The ditch (dry moat) which extends along the exterior slope of the parapet is the widest, most uniform, and longest moat on the mountain.

The longest and most substantial breastworks on Maryland Heights is the north wall of the Exterior Fort. This stone and earth wall extends 560 ft down the west slope of the mountain, and in conjunction with a similar and parallel breastworks to the south, it effectively defends the plateau just below the crest and the Interior Fort. These two breastworks ascend steeper terrain than any other fortification on the mountain. From their lowest elevation on the west slope to their juncture with the Interior Fort, these two lines ascend nearly 130 vertical feet. More stone appears in the breastworks of the Exterior Fort than any other fortification (excepting the Stone Fort) on Maryland Heights.

Every battery on the mountain, with the exception of the Spur Battery and the 100-pounder Battery, has earthworks. Although records reveal nothing about the appearance of these two batteries, sandbags--and not earth--probably protected the guns at these two positions.

The platform supporting the 100-pounder Battery stands as the highest and widest manmade gun platform on the mountain. No other battery permits a gun to cover a 360-degree range. The weight of the 100-pounder Parrott tube (9,700 pounds), in conjunction with its elevation on Maryland Heights (1440 ft), probably makes it the heaviest gun at the highest elevation east of the Mississippi during the Civil War.

Thirteen powder magazines remain today on Maryland Heights, with all but one (in Campground Area 2) in or near a fortification. The Interior Fort has the most magazines with three. The 100-pounder Battery, 30-pounder Battery, Naval Battery, and Spur Battery each has two; the Mortar Battery has only one magazine. Most of the magazines are rectangular, with ground-surface exterior dimensions ranging from 40 x 25 ft for the two magazines at the 30-pounder Battery to 25 x 15 ft for one at the Naval

Battery. Magazine depths range from eight feet at the Interior Fort to only three feet at the Mortar Battery magazine. Depths generally average five feet. Unlike the fortifications and campgrounds on Maryland Heights, the mountain's powder magazines are the only archeological features which show a high degree of uniformity.

Heavy artillery units from New York and Massachusetts manned the fortifications on Maryland Heights throughout the war. Prior to the siege of September, 1862, Company F of the 5th New York Heavy Artillery occupied the only battery on Maryland Heights (the Naval Battery). When the Federals returned to the heights in late September, 1862, a battalion of the 1st Massachusetts Heavy Artillery (formerly the 14th Massachusetts Infantry) manned the guns at the Naval Battery, 30-pounder Battery, and Howitzer Battery (at the location of the north wall of the Interior Fort). Following the evacuation and reoccupation of Maryland Heights in June-July, 1863, a battalion of the 1st Massachusetts returned along with a battalion of the 8th New York Heavy Artillery. By the first of December, 1863, a battalion from the 5th New York Heavy Artillery manned all the batteries on Maryland Heights. This battalion of the 5th remained on the mountain until the end of the war in Virginia in April, 1865.

Although contemporary Civil War maps show the location and general configuration of the Maryland Heights defenses, this study has provided detailed measurements and drawings of seven of the eight battery positions on the mountain (the Spur Battery lies just outside the park boundary and was not mapped). In addition to the major fortifications, this project also recorded features not included on contemporary maps--features such as magazines, embrasures, gun platforms, infantry defenses, and blockhouses.

As time takes its toll on the historic structures upon Maryland Heights, future historians will depend upon this study to gain a better understanding of the "citadel of Harpers Ferry."

CHAPTER VI
CIVIL WAR CAMPGROUNDS

Stone foundations and unnatural rock piles clutter the crest and plateaus. Circular platforms and excavated ditches hide under the decaying humus. Crumbling walls and mysterious holes defy the observer's questions. This is Maryland Heights and its history of occupants' unknown.

The campaigns receive hours of study. The maps show important defenses. Yet little is known about the Civil War soldier's primary occupation--life in his tents, huts, and shebangs between battles.

Occupation is the story of Maryland Heights. From the last week of May, 1862, until the last week of July, 1865, soldiers--primarily Union soldiers--lived, worked, and played upon Maryland Heights almost continuously. When they left at the close of America's bloodiest war, much of their soldier's life remained behind them.

The campground remains on Maryland Heights represent the largest intact Civil War camp sites within the National Park System. Locating, identifying, and mapping these sites has served as a primary purpose of this project.

This chapter first synthesizes documentary information pertaining to the campgrounds on Maryland Heights. Then follows a section which details the physical description of individual features within these camps, recorded through archeological fieldwork 125 years after the Civil War. An interpretation of these features--including specific uses and periods of occupation--then precedes a summary of this chapter.

HISTORICAL BACKGROUND

Methodology and Sources

Charles Snell's four volume study (1959) of the defenses of Harpers Ferry relies primarily upon the Official Records as a source of information. Since few documents published in the Official Records deal with the arcane subject of camp location, this usually invaluable source provides limited assistance when searching for information on the campgrounds of Maryland Heights.

Government records not published in the Official Records sometimes prove extremely helpful, however. Regimental letter and order books, morning reports, and descriptive lists often contain specific data on the location and duties of a regiment. Many of these records are filed at the National Archives and Records Administration in Washington, D.C.

Published regimental histories and personal accounts, on the other hand, prove especially helpful in determining dates and sites of an occupation. These sometimes include day-by-day accounts of a regiment's whereabouts and its role at specific locations. Most importantly, regimentals often include detailed descriptions of life in an everyday camp. Subjects such as camp layout, quarters, daily routine, and recreational activities often receive hundreds of lines of print in regimental and personal histories. Some of these books, however, were written years after the war and as a result, much of the content evolves from fading memories rather than facts.

Newspapers, as well as unpublished manuscripts, diaries, and letters, often present a plethora of untapped data pertaining to everyday life in the ranks. The biggest problem here is discovery of these sources, many of which remain hidden in attics and boxes throughout the country.

Photographs usually prove helpful in any historical research, but unfortunately, only one known photograph exists of a campground on Maryland Heights, and it lacks detail. Maps also are helpful, and in the case of campgrounds on Maryland Heights, George Kaiser's and P. A. Porter's maps proved particularly useful.

Examination of the sources listed above became the primary task of the project historian. Holdings at the National Archives, the Library of Congress, and the U.S. Army Military History Institute at Carlisle, Pennsylvania, were examined thoroughly for material relevant to the military occupation of Maryland Heights. Other collections at local and state libraries and historical societies also received careful scrutiny. Discovery of an item in the National Union Catalog of Manuscript Collections produced a letter requesting a copy of the pertinent information. In sum, this investigation attempted to be as thorough as possible.

The volume of data generated by this project necessitated the organization of documentation into five major categories: physical history; social history; campaigns; troops on Maryland Heights; and camp locations. Each of these broad topics then was divided into subcategories. For example, under "camp locations," there are two subcategories: individual campsite and individual state. For example, Morning Reports for Company K, 5th New York Heavy Artillery, report this company arriving and encamping at the 30-pounder Battery on November 30, 1863. Under the system outlined above, this data is filed in the "camp locations" notebook under 30-pounder Battery and New York state. In the case of individual camp locations, all data is filed chronologically; in the case of states, regiments are filed numerically and companies alphabetically according to branch of service.

Whenever discovery of data occurred, the following procedure was followed: (1) subject copied either by hand or photocopier; (2) subject analyzed and cross-referenced for topic(s) and date(s); and (3) subject filed under appropriate category in notebook(s).

Bibliographic data within the notebooks is limited to author, title, and page number. For full bibliographic citation, one must consult the master bibliography.

Regulation Campgrounds of the Civil War

The United States Army Regulations of 1861, issued in a revised version in 1863, defines a camp as "the place where troops are established in tents, in huts, or in bivouac." When locating a camp, the regulations require officers to consider these criteria: the site should 1) provide for the health and comfort of the troops; 2) facilitate good communications; 3) offer convenience of wood and water; and 4) provide adequate resources in provisions and food.[1]

For an infantry regiment of 1000 men (Figure 6.1), a camp measures 400 paces across its front (or approximately 1200 ft) and 431 paces across its flanks (approximately 1293 ft). The tents are arranged in ranks and files. The number of ranks varies with the strength of the companies and the size of the tents.[2]

Each company pitches its tents in two files, facing on a street perpendicular to the color line. The width of a street depends on the front of the camp, but it should not be less than five paces. The interval between ranks of tents measures two paces. Two paces also separates the files of tents.[3]

A kitchen for each company sits 20 paces (60 ft) behind the rear rank of its respective company. The noncommissioned officers and sutler set up 20 paces in rear of the kitchens; the company officers establish themselves 20 paces farther in the rear; and the field and staff, 20 paces in rear of the company officers.[4]

Sinks (latrines) for the officers sit 135 paces (approximately 400 ft) to the rear of the regimental officers' tents. Sinks for the men stand at the opposite end of the camp, 150 paces (450 ft) in front of the color line. Regulations require that all sinks be concealed by bushes, and that a portion of the earth excavated for sinks "be thrown back occasionally."[5]

The regulations layout an artillery camp by battery. For example, for a battery of six pieces, the men establish tents in three files--one for each section (two guns). The distance between the ranks of tents measures 15 paces (45 ft). Kitchens stand 25 paces (75 ft) in front of the front rank of tents. Officers locate their tents 25 paces in rear of the rear rank of tents.[6]

The regulations make no mention of camp layout for a company or regiment of artillery.

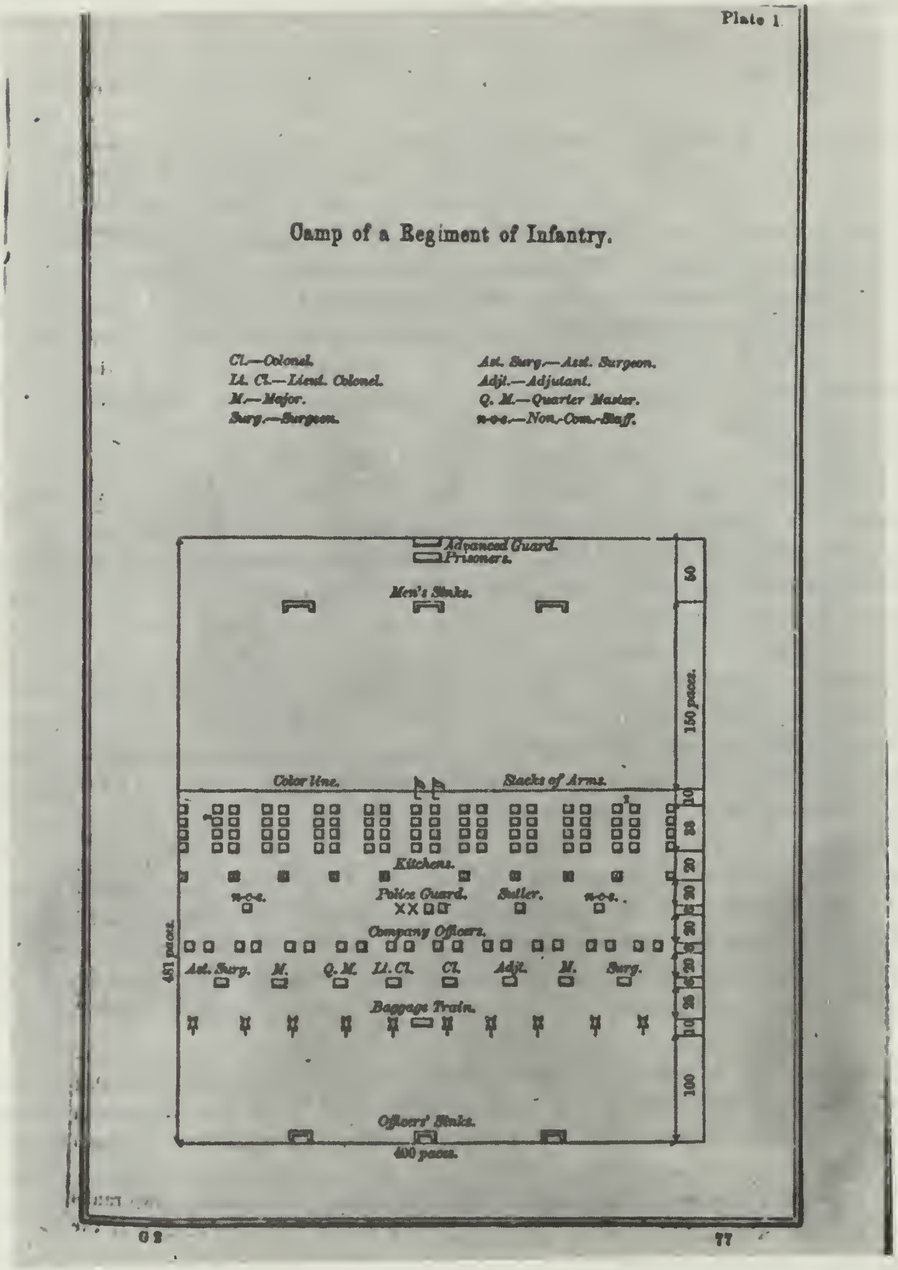


Plate 1.

Camp of a Regiment of Infantry.

Cl.—Colonel.
Lt. Cl.—Lieut. Colonel.
M.—Major.
Surg.—Surgeon.
Ast. Surg.—Asst. Surgeon.
Adjt.—Adjutant.
Q. M.—Quarter Master.
n-c-s.—Non.-Com.-Staff.

Advanced Guard.
Prisoners.
Men's Sinks.
Color line.
Stacks of Arms.
Kitchens.
n-c-s.
Police Guard.
Sutler.
n-c-s.
Company Officers.
Ast. Surg.
M.
Q. M.
Lt. Cl.
Cl.
Adjt.
M.
Surg.
Baggage Train.
Officers' Sinks.
400 paces.
481 paces.
50
150 paces.
10
20
20
20
20
100
62
77

Figure 6.1 Regulation Infantry Camp. (From Revised United States Army Regulations of 1861, p.77)

Maryland Heights Ill-Suited for Encampment

With the exception of adequate wood, Maryland Heights meets none of the criteria outlined in the army regulations.

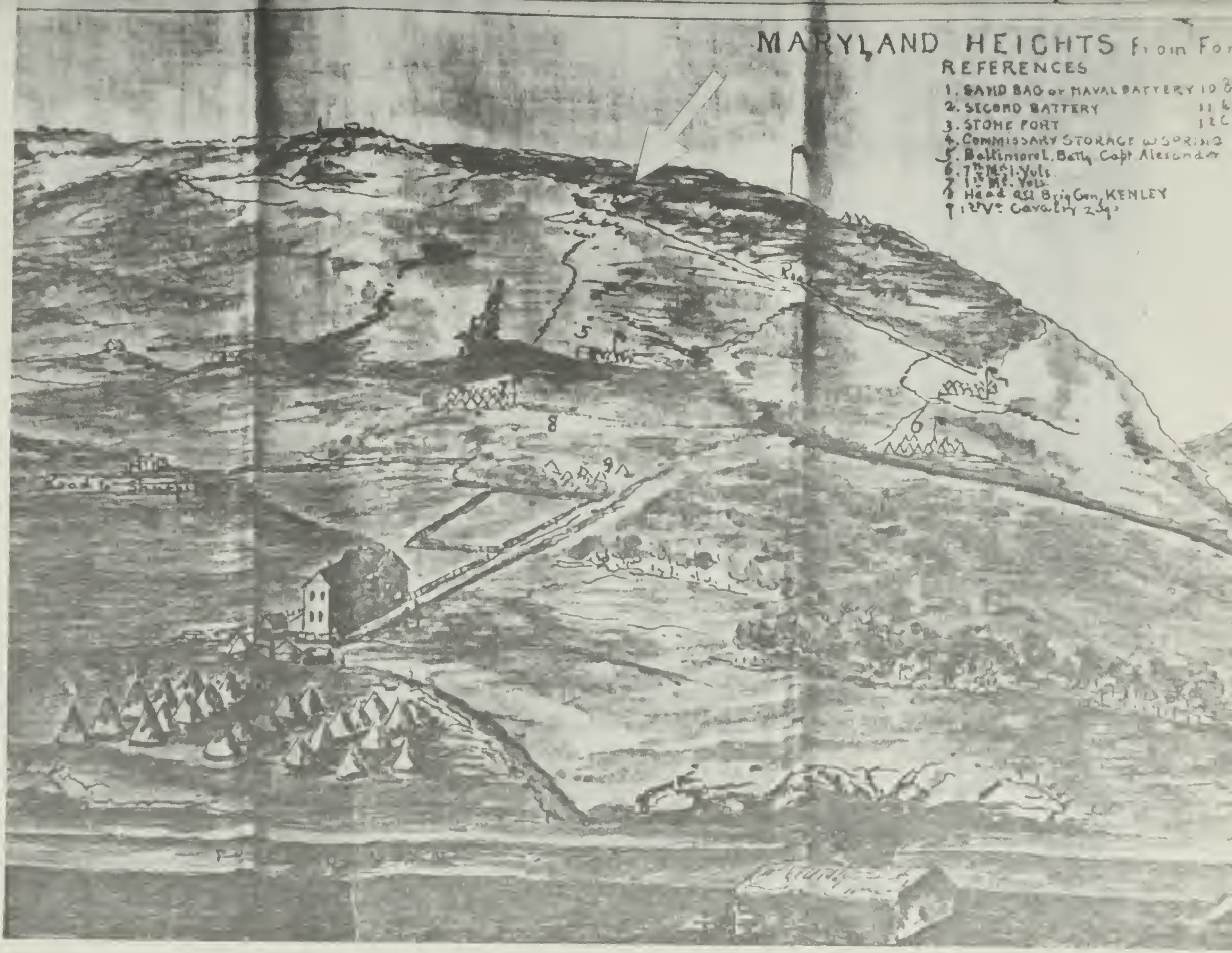
Absence of water proved a particular problem. As early as June 23, 1861, a preliminary survey of the mountain as a defensive stronghold forced Union Maj. Gen. Robert Patterson to admit: "The main difficulty to be overcome is the supply of water; the springs, which a week since afforded an ample supply, have become dry." Patterson's chief engineer discovered no water within half a mile of the position selected on the crest for an entrenched camp. Although water abounded at the mountain's eastern base in Pleasant Valley, hauling it up a "very difficult" ascent presented a formidable drawback. In addition, a sizeable force would be required to protect the water supplies in Pleasant Valley. As Patterson reluctantly concluded: "I am convinced the occupation of the heights would be attended with great labor, and unless a strong force be placed in Pleasant Valley to keep open communications with water, it cannot be held at this season [summer] by any command opposed."[7]

Protecting Harpers Ferry from approach from the west became the Federal strategy in 1862, and as a result, water sources on the mountain's western side became a primary concern. Engineers determined an excellent spring on the Unseld farm could supply from 2,000 to 3,000 men "with care by damming it up, and saving the water." In fact, engineer Capt. W. A. Powell recommended "sinking" the spring deeper to insure a larger supply. Powell also suggested cisterns be constructed to collect rain water.[8] Although no records provide details on when improvements occurred, the spring at the Unseld farm exists today as an excavated and dammed small pond.

The map key in George Kaiser's January, 1863, illustration labels point number four as "commissary storage at spring" (Figure 6.2). Kaiser shows this spring on the west slope, two-thirds the way up the mountain and midway between the Stone Fort and the 30-pounder Battery (identified by Kaiser as the Second Battery). A December, 1864, order outlining camp boundaries leaves no doubt that this spring--located along Road L and approximately 500 vertical feet above the Unseld farm--provided water to the 30-pounder Battery, Mortar Battery, and 100-pounder battery.[9] At the time of Kaiser's illustration, this spring no doubt supplied the garrison occupying the Stone Fort, Interior Fort, and Exterior Fort.

During his analysis of the defenses in May, 1863, Brig. Gen. John G. Barnard noted a spring supplied the Stone Fort, but he failed to mention its location. Barnard did recommend, however, construction of a "secure structure" within the Stone Fort "to contain provisions and water-tanks."[10] Again, known documents do not reveal whether this suggestion became reality.

Figure 6.2 View of west slope of Maryland Heights from Fort Duncan, by George Kaiser, January, 1863. Site of spring indicated by white arrow. (National Archives)


MARYLAND HEIGHTS from For
REFERENCES
1. SAND BAG or NAVAL BATTERY
2. SECOND BATTERY
3. STONE FORT
4. COMMISSARY STORAGE w SPRING
5. Baltimore I. Batty Capt Alexander
6. 7th Md. Vols
7. 1st Md. Vols
8. Head qrs Brig Gen. KENLEY
9. 12th Va Cavalry 2 Sqs
10
11
12 C
5
6
8
9
R

In addition to water collection and distribution, sanitation and human waste also proved a problem on Maryland Heights. Thin soil and the mountain's rocky crest undoubtedly hampered latrine construction and prevented adequate drainage. Proper hygiene became an issue as early as September, 1862, when two brigades of the 1st division of the 12th Corps camped upon the mountain following its reoccupation after the Antietam Campaign. A September 28 circular from 3rd brigade commander Col. Thomas H. Ruger instructed as follows: "[S]inks will be dug for each Regiment and kept in proper order and daily inspected and covered and no other portion of the grounds will be resorted to by the men for necessary purposes." Ten days later, Ruger ordered all sinks "screened from view," and he reiterated his demand that the men "resort to no other place for necessary purposes." Insistence on the use of latrines prompted the commander of the 124th Pennsylvania Infantry to issue these preemptive orders: "All officers and soldiers are requested at the calls of nature to make use of the sinks[.] [A]ny officer or soldier found at any time committing a nuisance about the sinks will be severely punished."[11]

Unfortunately, known documents provide no information on the appearance of latrines nor of their locations with relation to the camps. The men did utilize sinks, however, as an 1863 order instructs them to "throw in dirt as often as may be necessary to prevent the air from being noxious."[12]

Adequate space for an encampment presented another major problem. Nowhere upon the crest of Maryland Heights appears level ground measuring 1200 ft x 1293 ft (400 paces by 431 paces)--the size of an infantry regiment's campground as prescribed by army regulations. The mountain's narrow plateaus, littered with rocks and boulders and flanked by precipitous slopes, generally provided the only available camping space for the artillery and infantry garrison. Such uncompromising terrain forced severe modifications in prescribed camp layouts, and nothing remaining today upon Maryland Heights resembles a "regulation" campground.

Appearance of Campgrounds on Maryland Heights: An Overview

Several contemporary sources provide limited information on the appearance of Maryland Heights campgrounds. The George Kaiser drawings of January, 1863, illustrate specific arrangements and locations of campgrounds (Figure 6.3). Col. P. A. Porter's sketch of July, 1863, lists specific occupants of campgrounds (Figure 6.4). A charcoal drawing by a soldier in the Signal Corps--the only known illustration of an encampment on Maryland Heights--depicts his camp in the summer of 1864 (Figure 6.13).

Although limited data exists covering the overall layout of the Maryland Heights campgrounds, ample information survives describing the composition and appearance of a soldier's individual quarters. The citations presented below demonstrate the variety of shelters utilized on Maryland Heights during the Civil War.

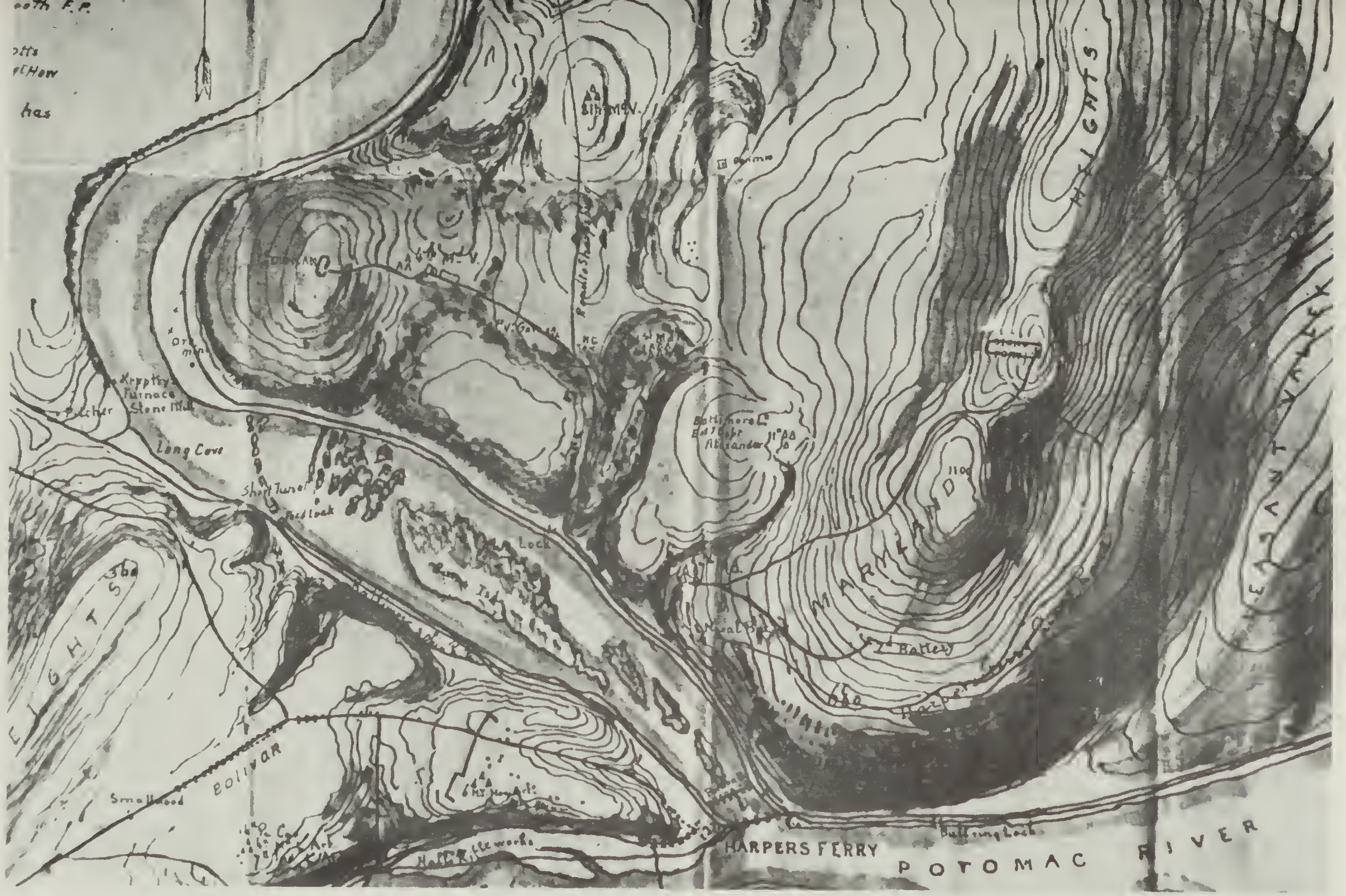

HEIGHTS
MARYLAND
PLEASANT VALLEY
Battery
Long Cove
Short Tunnel
Lock
Bolivar
Smallwood
HARPERS FERRY
POTOMAC RIVER
has

Figure 6.3 Plan of Campgrounds and Fortifications on Maryland Heights, by George Kaiser, January, 1863. North toward top of map. (National Archives)

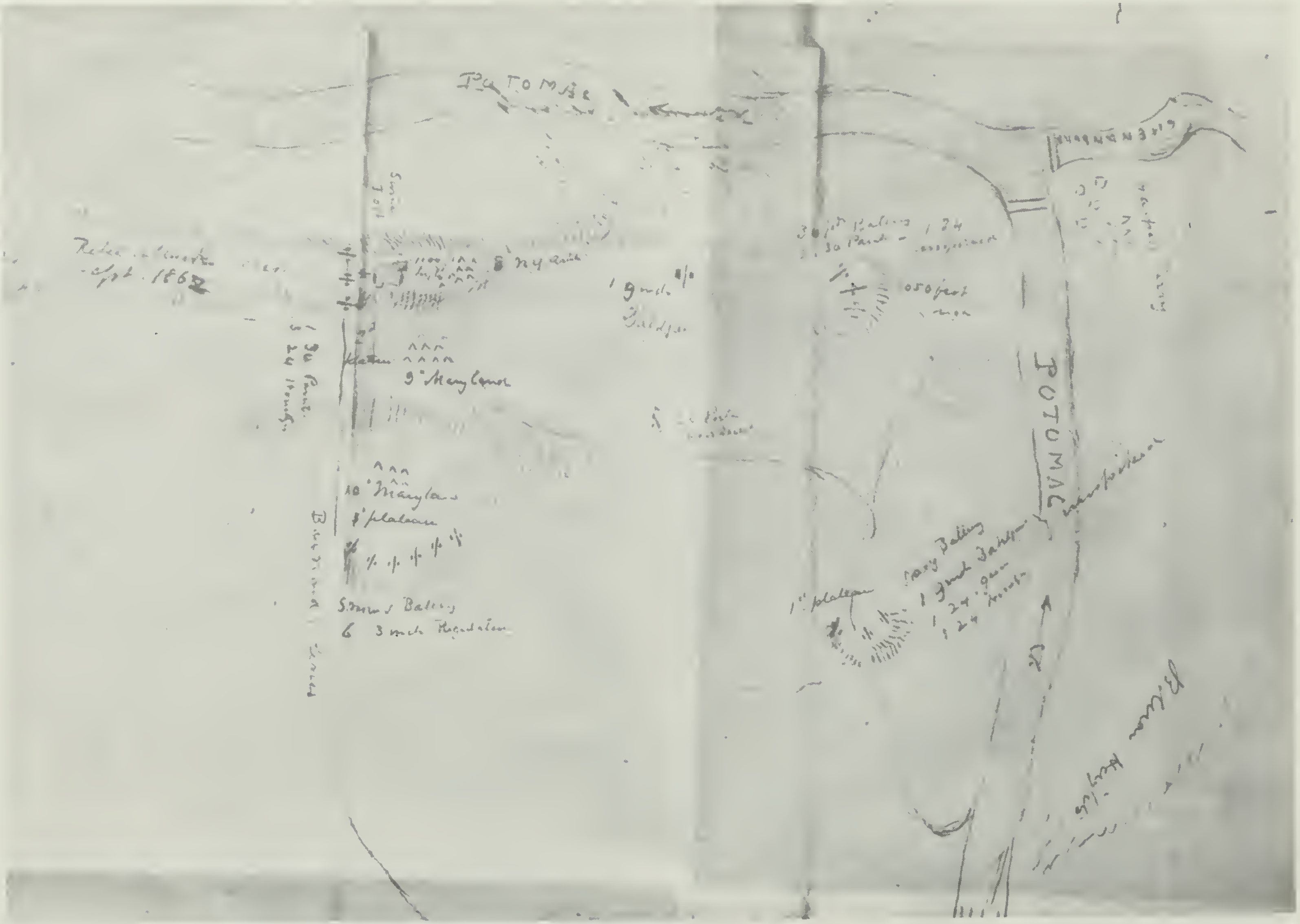

POTOMAC
POTOMAC
Sept. 1862
9th Maryland
10th Maryland
1st plateau
Bolivar Heights

Figure 6.4 Plan of Maryland Heights Campgrounds and Fortifications, by Col. P. A. Porter, July, 1863. North toward lower left corner of map. (National

Shelters ranged from primitive brush canopies to sophisticated log structures. Tents, especially Sibley tents, served as the primary shelter for infantry regiments on the mountain. Heavy artillery units, which occupied specific fortifications, usually resided in huts or cabins weatherized to withstand winter's harsh winds and temperatures.

When the Federals first occupied Maryland Heights in the summer of 1861, the soldiers considered the post a temporary assignment, and their quarters reflected an attitude of impatience. For example, Charles Morse of the 2nd Massachusetts Volunteer Infantry--one of the first Union regiment's to occupy Maryland Heights--notes in his August 5, 1861, letter that his regiment set to work "building shelters of bushes."

"They are built like long sheds," Morse wrote, and "have posts every little distance, rafters and string pieces connecting them." These brush canopies, Morse continued, keep the men "cool and comfortable."[13]

Miles Clayton Huyette of the 125th Pennsylvania Volunteer Infantry also experienced a brush bower in the fall of 1862. Huyette best remembered, however, the steep mountain slope he slept upon near the Naval Battery: "We drove stakes in the ground and placed logs above them so that we would not slide down hill when sleeping," Huyette recalled. "[We] would wake nights sitting against the up-hill side of the logs with legs hanging over."[14]

For those who stayed on the mountain a while longer than Morse or Huyett, the tent became the standard shelter. Louis Holt of the 14th Massachusetts Heavy Artillery boasted on October 16, 1862, that his Sibley tent had just been "fixed up to suit us."

"[W]e had it stockaded and a floor in it and a set of bunks built all round it," Holt proclaimed. "[W]e have got it stockaded with logs we dug a trench as large round as the tent and set logs up on end planted them solid in the earth and filled the cracks with mud and then set the tent upon it." As Holt concluded, "it makes a great deal more room and is warmer and healthier than a tent set on the ground."[15]

William J. Reichard of the 128th Pennsylvania Volunteer Infantry enhanced his shelter tent with similar improvements in October, 1862: "[T]he boys have raised the tent about 2 feet with logs and put the tent on top. [T]he cracks they will plaster shut and then we can keep warm."[16]

Placing a tent upon logs certainly helped counter inclement weather, for as Reichard observed following a heavy rain shower: "I did not get wet for the water cant [sic] run in our tent [because] we have logs around the ends of the tents and a ditch dug around that."[17]

The tent proved little competition to the cozy log structures that began springing up in Maryland Heights' campgrounds during the late fall and early winter of 1862. The men called the structures "winter quarters," and Frederick Wild of Alexander's Baltimore Battery of Light Artillery proudly described his individual cabin located on the Unseld farm:

> Our little group of five built our cabin on the brow of a hill, we dug down about three feet and leveled a space of about eight by ten feet, the sides were built of logs and the chinks filled in with clay; the roof was laid with saplings covered with the earth which we dug while leveling the space. We made a stove out of a piece of heavy sheet iron picked up in the ruins of the old arsenal at Harpers Ferry and enjoyed many delicious meals cooked upon it.[18]

Others also made use of the ruins of the ill-fated armory and arsenal. Joseph W. Kirkley of the 7th Maryland Volunteer Infantry recalled using "brick and iron plates" from the abandoned ruins to make his mountain home more comfortable.[19]

Some, like Warren Holt of the 14th Massachusetts Heavy Artillery, became quite adept at cabin construction. As Holt noted in a letter to his brother on November 2, 1862: "[I] could put up any kind of building with nothing but an ax and a few nails. . . we spot the logs on one side and scarf them on the other so they fit together snug." Holt concluded by saying: "[We] fill the holes between the logs with small stics [sic] and then plaster the outside of the building with mud. [T]he mud here will stick like mortar."[20]

Although most preferred huts for winter quarters, Col. Howard Kitching of the 6th New York Heavy Artillery yearned for a return to a tent: "My hut is no protection from this storm," he wrote to his wife in March, 1863. "[I]t rains right through, so that my bed, over which I have laid an india-rubber blanket, has a puddle of water in the centre three or four inches deep."[21]

Heating a tent or hut in the harsh winter environment also proved an interesting endeavor. William Reichard of the 128th Pennsylvania observed numerous heating arrangements, ranging from fireplaces within quarters to "flues under through the tent." Reichard explained this setup as follows: [T]hey make the fire outside and run it under the tent on one side back where they have a chimney." Reichard noticed this worked in fair weather, "but when rainy, it is disagreeable to tend it."[22]

The different styles of quarters on Maryland Heights varied widely, and as Reichard summarized in a November 25, 1862, letter:

> Some [are] built for 2, 4, & 6 and cover with the shelters, others cover with logs and ground on top, some of the boys who were lucky enough to get boards have them covered with boards. Many of the officers have sleeping apartments built on behind to their marquees about the size of the latter; others have log huts and the Marquees stretched over it: our officers have one of the neatest quarters in the reg. they have the bedroom on behind.[23]

Whatever the style, the primary purpose of all quarters on Maryland Heights was to protect the soldier from the weather. This sometimes proved nearly impossible, for as the 7th Maryland's Joseph Kirkley proclaimed one winter day: "After a varied experience of wind, snow, sleet, hail, rain, and mud, the men came to the conclusion that it was nowhere else than up here among these mountains that the weather was made and tried on."[24]

Specific Camp Sites on Maryland Heights

Although the records confirm dozens of regiments and thousands of men camping upon Maryland Heights during the Civil War, an infinitesimal number of official records and personal narratives state precise locations of encampments. Often one reads inexact words like "camped on west slope" or "pitched tents near the crest."

As a result of this imprecise language, the following section discusses only those campground areas which have a definite association with a regiment or regiments occupying Maryland Heights.

Crest Just South of Stone Fort (Campground Area 4). The Kaiser map of January, 1863, presents the general layout of a campground on a plateau just south and west of the southwest bastion of the Stone Fort (Figure 6.5).

A road passing north-south through the center of this plateau defines the primary configuration of this campground. On each side of the road appear four lightly-shaded squares and four circles. These structures parallel the road in a vertical arrangement. The sets of squares and circles align opposite each other in pairs, with the road dividing the campground in half. Eight squares occupy the northern half of the plateau; eight circles fill the plateaus's southern half. Regular intervals separate the squares, but the circles practically abut against each other. The letter "T" appears within the second circle (from south to north) on the east side of the road. No explanation or definition accompanies this particular designation. No other structure offers any form of identification.

According to Kaiser's crude scale, the encampment measures approximately 200 ft in length and 50 ft in width. Circles and squares each run approximately 100 ft in length. The squares probably represent cabins or huts; the circles no doubt are Sibley tents.

Kaiser does not identify the occupants of this campground. Other records show, however, that Company B, 14th Massachusetts (later 1st Massachusetts) Heavy Artillery, arrived at the Stone Fort on December 23, 1862, to man the Howitzer Battery (located immediately north of the Stone Fort). This company remained stationed at this position until the evacuation of Maryland Heights occurred on June 30, 1863.[25]

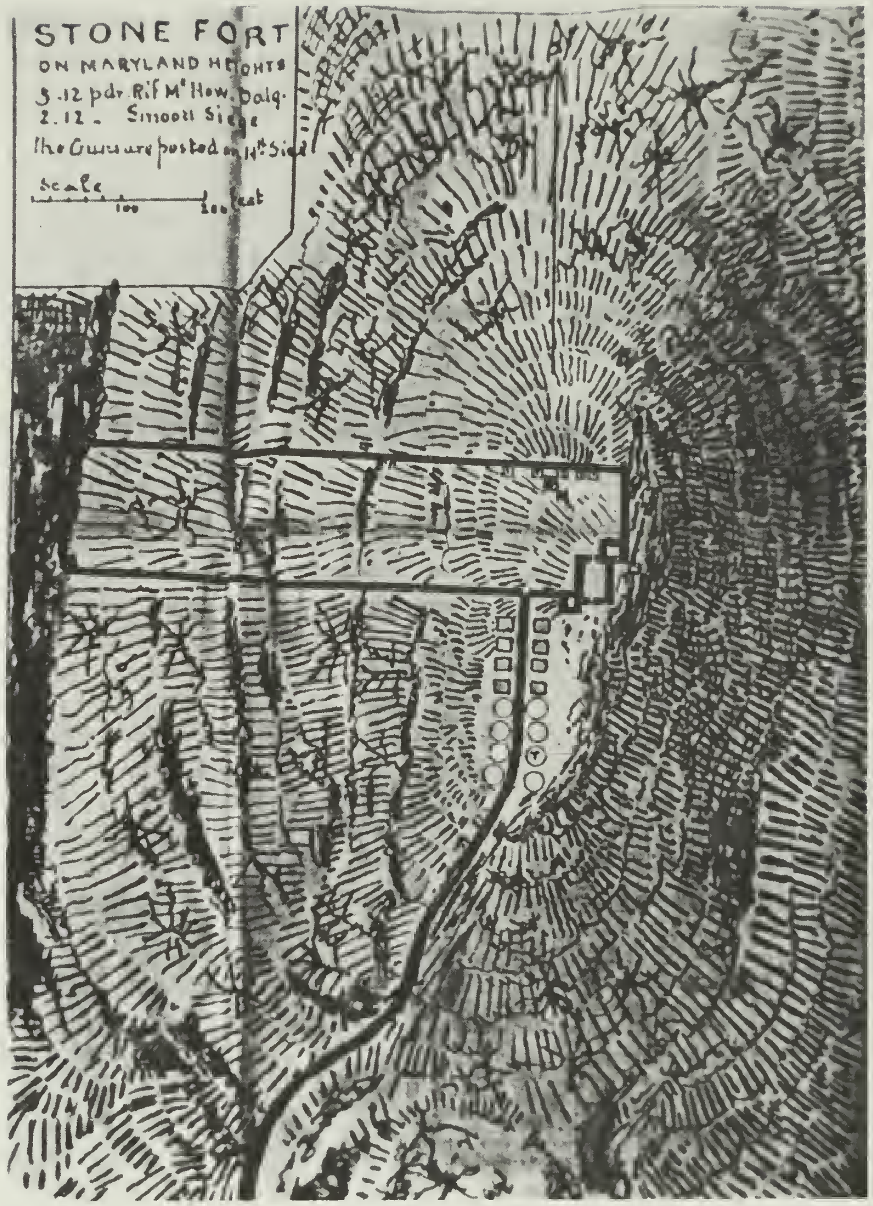

STONE FORT
ON MARYLAND HEIGHTS
3 .12 pdr. Rif Mt How. Dalg.
2. 12 . Smooth Siege
The Guns are posted on 14th Sied
Scale
100
200 feet

Figure 6.5 Stone Fort Area Plan, by George Kaiser, January, 1863. (National Archives)

The Federals soon reoccupied Maryland Heights, and Company K, 8th New York Heavy Artillery, occupied the Stone Fort area on July 10, 1863. In fact, Col. P. A. Porter's map specifically identifies the 8th New York encampment just south of the Stone Fort (Figure 6.6). Company K of the 8th remained here until July 27, 1863. Then Company B of the 1st Massachusetts Heavy Artillery returned to its former position. The Massachusetts men remained at the Stone Fort until November 30, 1863, when Company I, 5th New York Heavy Artillery, replaced them. Company I of the 5th New York remained in position at the Stone Fort through at least January, 1865. Company records for February through April, 1865, unfortunately do not specify the company's location.[26]

Crest North of Stone Fort (Campground Area 1). On July 27, 1863, Brig. Gen. Henry H. Lockwood, commanding the forces about Harpers Ferry, issued General Order No. 11, in which Section 6 ordered the 2nd Maryland Eastern Shore Volunteer Infantry into a position north of the Stone Fort.[27]

The distance of this regiment's encampment north of the Stone Fort is not prescribed in Lockwood's order; and unfortunately, no maps or documents specifically locate the 2nd Maryland Eastern Shore camp.

The regiment apparently constructed substantial quarters during its tenure on the crest (until early April, 1864); for an order detailing a 100-man fatigue party to the crest on April 20, 1864, instructs the party to "occupy the quarters in the vicinity of the Stone Fort recently vacated by the 2nd Eastern Shore Infantry."[28]

Another order dated May 21, 1864, instructs another fatigue party to occupy the "Maryland Barracks."[29] No records have been discovered which describe the size or appearance of this structure(s).

Plateau West of Crest and South of Stone Fort (Campground Area 2). Colonel Porter identifies this area as the "2nd plateau" on his July 21, 1863, illustration of Maryland Heights (Figure 6.7). Porter shows this plateau occupied by the 9th Maryland Infantry, a six-months' regiment organized in Baltimore in June and July, 1863. The 9th Maryland occupied this position during the second week of July, 1863. It remained there until August, when the regiment transferred to Loudoun Heights.[30]

Other than Porter's map, no information currently exists on the size, composition, or arrangement of the camp of the 9th Maryland.

30-pounder Battery (Campground Area 9). Identified by Kaiser as the "Second Battery," his plan of the 30-pounder Battery in January, 1863, shows an apparent encampment located on the north side of the fortification (Figure 6.7).

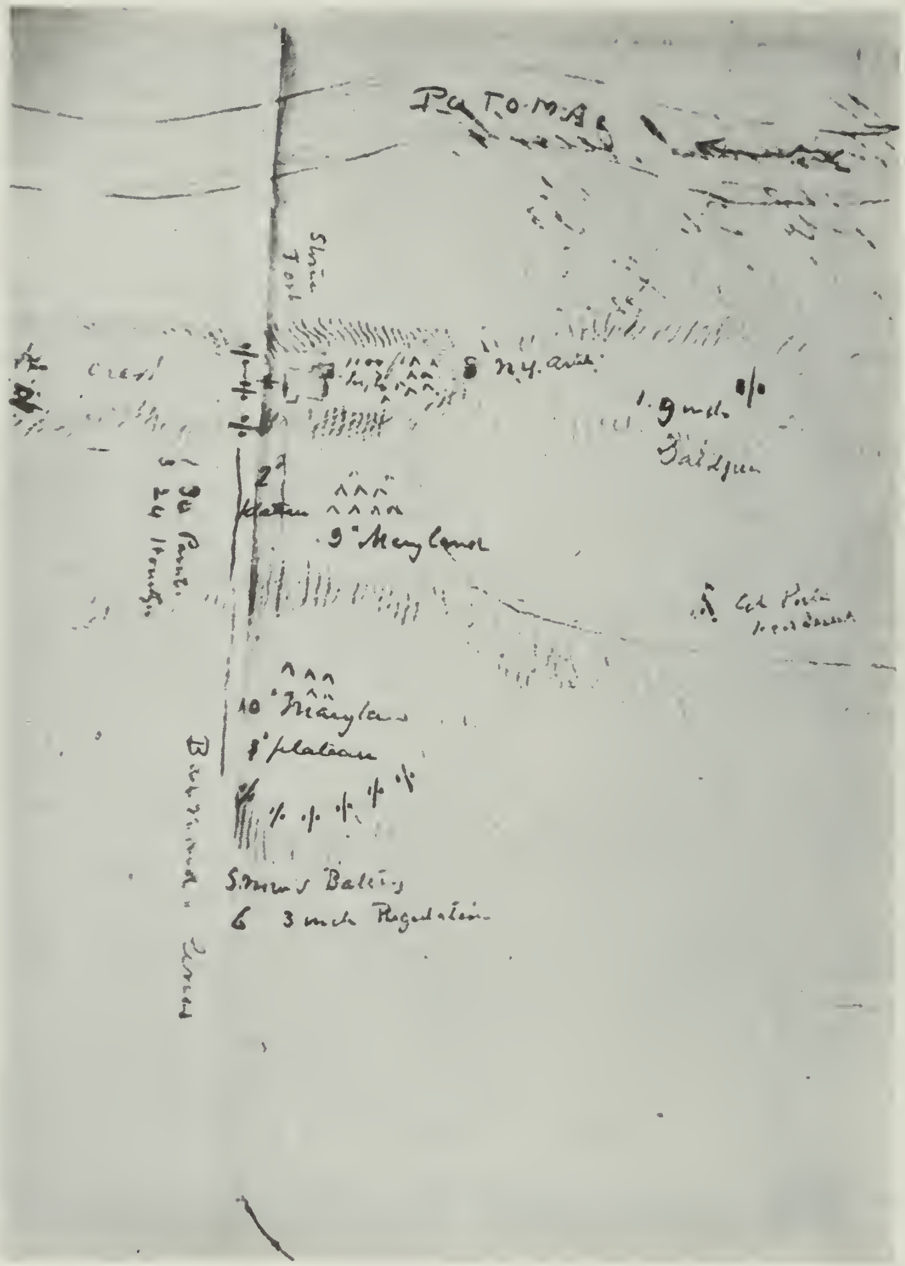

PATOMAC
Crest
8 N.Y. artil.
1. 9 inch
Dahlgren
2d Watson
9 Maryland
30 Parrott
24 Howitz
10 Maryland
8 platoon
Simm's Battery
6 3 inch Regulation

Figure 6.6 North Half of P. A. Porter Map, July, 1863. North toward lower left of map. (National Archives)

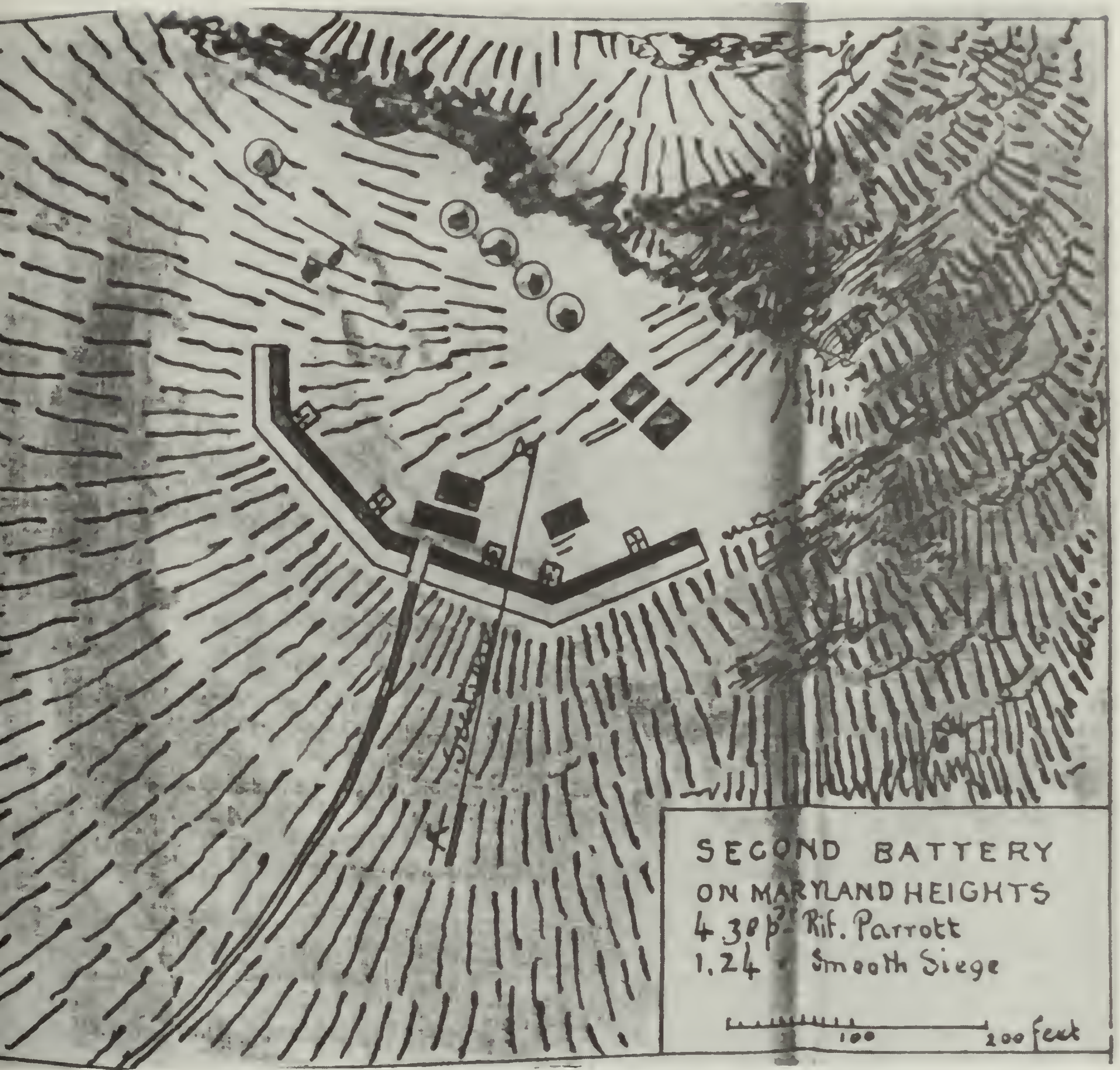

SECOND BATTERY
ON MARYLAND HEIGHTS
4 30 pr. Rif. Parrott
1, 24 " Smooth Siege
100
200 feet

Figure 6.7 30-pounder Battery Plan, by George Kaiser, January, 1863. North toward top of map. (National Archives)

On Kaiser's plan, the encampment consists of five circles and three squares. Four of the circles and the three squares align along a 45 degree axis running northwest to southeast. The four circles virtually abut; a regular interval separates the three squares. A wider interval distinctly separates the block of squares from the circles.

The letter "B" appears within the northern-most square; the letter "N" is included within the southern square. No key provides identifications for these letters. A nondescript shaded area appears within each of the five circles.

According to Kaiser's imperfect scale, this "row" of circles and squares measures approximately 240 ft in length. The southern end of the "row" lies about 60 ft north of the 30-pounder Battery's eastern flank. The northern end sits nearly 170 ft northeast of the battery's western flank.

The fifth circle, independent and isolated to the west, lies approximately 140 ft north of the west flank of the battery, and about the same distance from the "row's" northern-most circle.

The circles probably represent Sibley tents; the squares symbolize huts or barracks.

Kaiser does not identify the occupants of this campground, but documents reveal that Company I, 14th Massachusetts (later 1st Massachusetts) Heavy Artillery occupied this position in October, 1862. Company I remained in charge of the 30-pounder Battery until June 10, 1863, when it left Maryland Heights and reported to Winchester, Virginia. Following the Confederate victory at the Second Battle of Winchester (June 13-15, 1863), the Federals fled down the Valley, with many seeking shelter upon Maryland Heights. Company I of the 14th Massachusetts escaped capture at Winchester and returned to Maryland Heights on June 16, 1863. From then until the evacuation of the mountain on June 30, 1863, Company I shared a position with Company F, 5th New York Heavy Artillery, at the 30-pounder Battery.[31]

During the second week of July, 1863, Federal forces reoccupied Maryland Heights; and from July 14-28, Company F of the 5th New York Heavy Artillery reclaimed its position at the 30-pounder Battery. Following this two-week stay by the New Yorkers, Company I of the 14th Massachusetts replaced the "boys" of the 5th, and it remained at the 30-pounder Battery until November 30, 1863. Then Company K, 5th New York Heavy Artillery, occupied the battery. This company remained at the 30-pounder Battery until April 30, 1865, or nearly three weeks after General Lee's surrender at Appomattox.[32]

Company K also was responsible for the gun positions at the Mortar Battery and 100-pounder Battery. Campground remains at two of these locations possibly are associated with Company K's occupation. In fact, the 1865 postwar map by John Donn distinctly shows two rectangular features at the location of the Mortar Battery (Figure 6.8). These rectangles may represent field works, or perhaps, Civil War barracks.

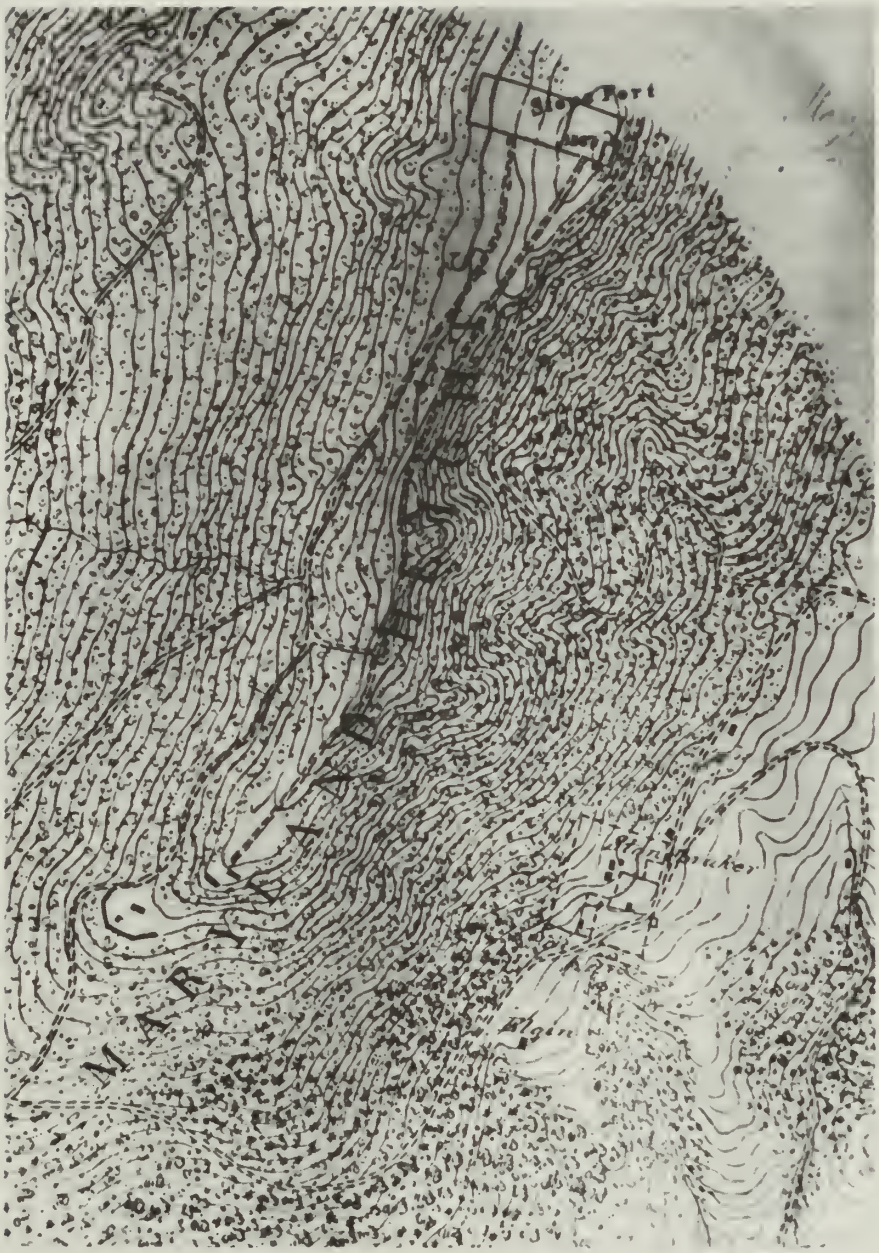

MARYLAND HEIGHTS
Stone Fort

Figure 6.8 Detail of 1865 Donn map of defenses on Maryland Heights. North toward top of map. (Harpers Ferry NHP)

A description of the campground boundary for the 30-pounder Battery is found in General Order No. 7, issued on December 8, 1864, by Capt. Edward E. Brown, commander at that defensive work. Since no similar description has been discovered for any other campground on Maryland Heights, this order deserves quotation:

> Boundaries of this camp is fixed as follows, commencing at the right of this battery on the road leading to Head Quarters thence down said road to the road intersecting it leading off from Hd. Qu. Thence along said last mentioned road to the left to a point at a large rock opposite the Mortar Battery. From thence in a straight line toward said mortar battery to the road at the 100 pd. Battery leading down the hill to the left of said Battery. Thence down said road to the spring of water that supplies these batteries. Thence in a direct line to the place of beginning.[33]

Another order from Captain Brown, which discusses the regulations and functions of guards at the 30-pounder Battery, identifies a "guard house" at that battery. For example, when identifying the routine of guard number one, Brown states: "His beat will extend from the Guard House along the parapet to the first gun." Unfortunately, no maps or documents describe the location of the first gun. The order definitely indicates, however, that the guardhouse stood within the battery (north of the parapet). In addition, Brown's order states that "at night the prisoners will sleep in the prison room of the guard house." Brown also orders the guardhouse to be "thoroughly cleaned out every morning previous to guard mounting."[34]

A cookhouse also existed at the 30-pounder Battery, for in a special order issued by Captain Brown on July 1, 1864, he noted: "Men of this camp are constantly running in and out of the Cook Room and taking dippers and other utensils to the inconvenience of the cooks. Soldiers barred from entering unless asked by cooks."[35] Unfortunately, the location of the cookhouse is not mentioned.

Campground North of Naval Battery (Campground Area 13). Only one known photograph exists which shows a campground on Maryland Heights.

In August, 1862, an unidentified photographer, standing on Camp Hill just east of the present location of the Mather Training Center, captured an image of the Naval Battery and the western slope of Maryland Heights (Figure 5.10). Although the Naval Battery stands more than 400 yards from the camera lens, magnification of the image reveals details of the encampment of Company F, 5th New York Heavy Artillery, located just north (behind) the battery.

Nine Sibley tents, standing in one row along a northeast-southwest axis, comprise the center of the camp. Four small black dots spread across the center of the clearing generally identify this line. Before magnification, observers believed these dots represented the huge naval guns at the battery; but upon careful examination, each dot becomes a shadow on the interior of a Sibley caused by an open tent flap.

Just behind this row of Sibleys on the left (west) appears a flagstaff, with the Stars and Stripes fluttering from its staff. On each side of this staff stands a Sibley tent. No other structures are evident in this area.

At the far right of the clearing, where the uncut trees abut against the battery and encampment, are two wall tents and two Sibleys. The walls tents appear in the far upper right of the clearing, and the entrance of each tent faces west. The two Sibleys border the woods at right and sit just below (south) of the wall tents.

Company F of the 5th New York Heavy Artillery abandoned this position on September 13, 1862, during Stonewall Jackson's siege and capture of Harpers Ferry. The Confederates reported they destroyed the camp, but no Federal reports confirm this.[36]

Following the siege, Union troops reoccupied Maryland Heights in strength. In fact, an October, 1862, illustration from Loudoun Heights shows, with great generality at far left, many tents occupying the cleared plateau around the Naval Battery (Figure 6.9).

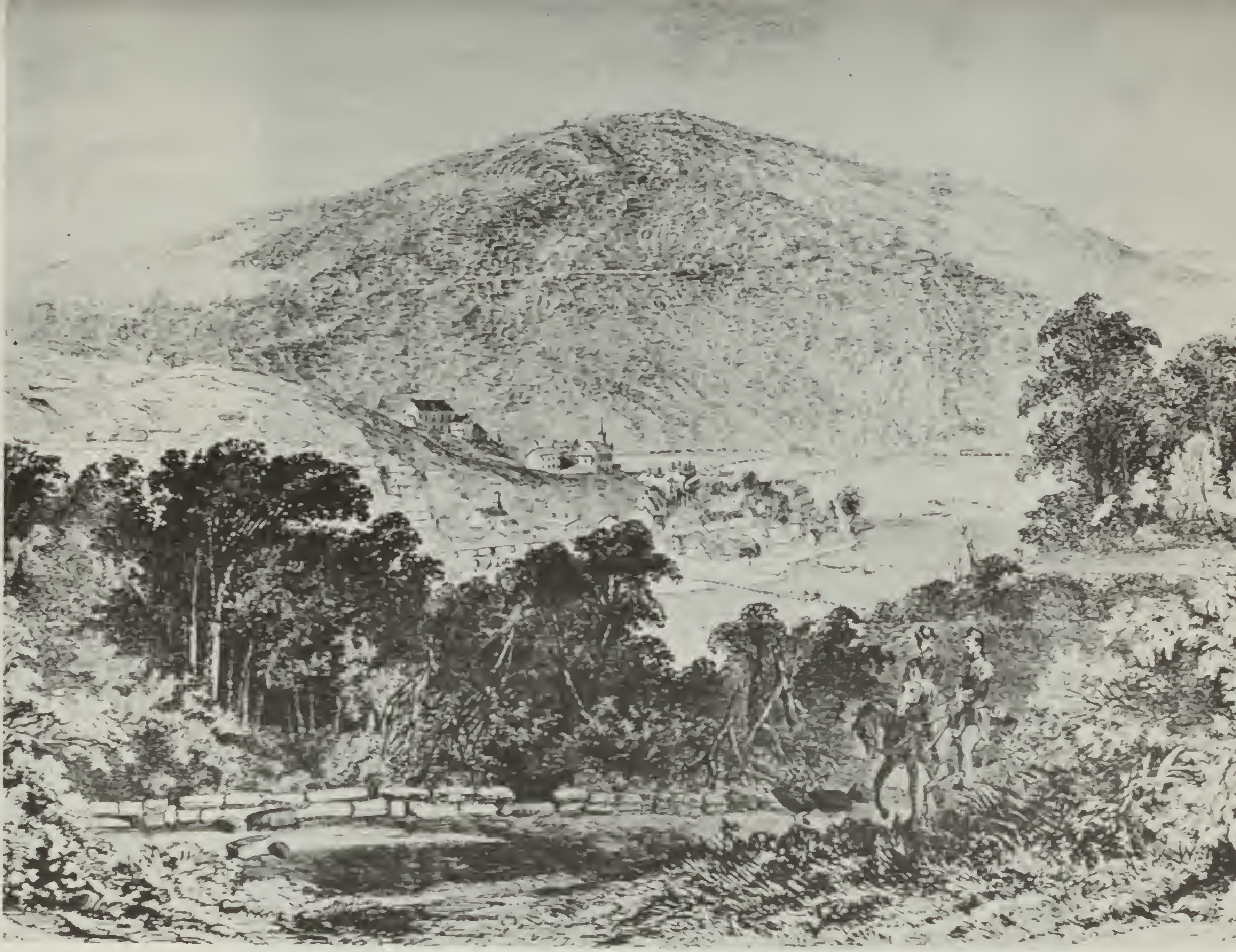
George Kaiser's January, 1863, plan of the Naval Battery provides the only detailed view of an encampment at this location (Figure 6.10). Kaiser shows 20 circles--arranged in four rows with five circles in each row--situated between two roads lying just north of the Naval Battery. As a whole, according to Kaiser's imperfect scale, the northeast and southwest ends of the encampment stretch 120 ft, while the northwest and southeast ends measure 100 ft.

All but three of the circles are partially shaded. The three which have no shading stand in the same row. No map key denotes the significance of this shading.

Located to the right (northeast) of the two southernmost rows are three shaded rectangles. Nothing on the illustration denotes their purpose.

Although Kaiser does not identify the occupants of these quarters, records reveal that Company H, 14th Massachusetts (later 1st Massachusetts) Heavy Artillery, occupied this position beginning on September 27, 1862. The Massachusetts men remained here until the evacuation of Maryland Heights on June 30, 1863. The company returned to this position in late July, 1863, and remained posted here until November 30, 1863. Available records show no occupation of the Naval Battery again until September-November, 1864, when a detachment of Company M, 5th New York Heavy Artillery, garrisoned this position.[37]

Figure 6.9 Drawing of Maryland Heights, looking north from Pipertown Road on Loudoun Heights, October, 1862. The plateau east of the Naval Battery appears at the far left. (Harpers Ferry NHP)



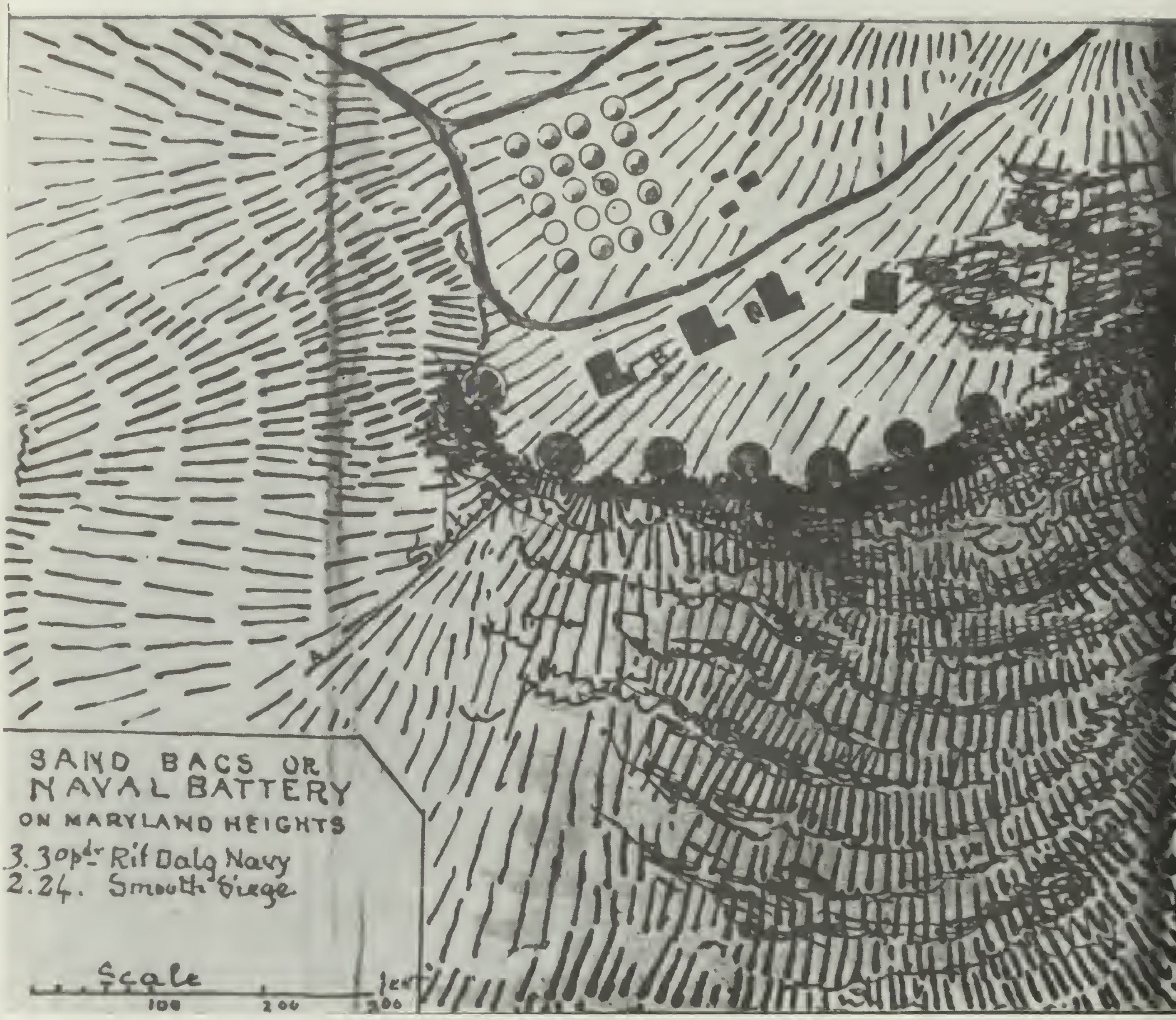

SAND BAGS OR
NAVAL BATTERY
ON MARYLAND HEIGHTS
3. 30pdr Rif Dalg Navy
2. 24. Smooth Siege
Scale
100
200
300
feet

Figure 6.10 Naval Battery Plan, by George Kaiser, January, 1863. North toward top of map. (National Archives)

Plateau East of Spur Battery (Campground Area 10). Col. P. A. Porter's crude map of positions on Maryland Heights shows the 10th Maryland Infantry and Snow's Company B, Maryland Light Artillery, occupying the Spur Battery plateau on July 21, 1863 (Figure 6.6).

Organized in Baltimore as a six-months' regiment in June and July, 1863, the 10th Maryland received orders to proceed to Maryland Heights on July 16. Snow's battery occupied the mountain eight days prior to the arrival of the 10th Maryland.[38]

No firm date indicates when Snow's Battery left the Spur Battery, but records for the 10th Maryland show the regiment at this position until November 1, 1863. During their three-month stay on the mountain plateau, the 10th designated its camp by three different names. Until July 27, 1863, the regiment referred to its quarters as "Camp Buzzard's Glory." Apparently this name did not reflect well on the temporary brigade commander, and on the 28th, the camp became "Camp Porter" (after Col. P. A. Porter). The final change occurred on September 19, 1863, when the 10th Maryland renamed its camp "Camp Wells" in honor of new brigade commander George D. Wells.[39]

Records for Company M, 5th New York Heavy Artillery, show a detachment of this company manning the Spur Battery from August-November, 1864.[40] No other records have been discovered discussing the occupation or the appearance of camps at this location.

Plateau West of Naval Battery Position. George Kaiser's January, 1863, illustration shows the 7th Maryland Infantry encamped on a plateau due west of the Naval Battery (Figure 6.11). Although not apparent on Kaiser's drawing, this plateau lies west of and above a deep ravine which runs north-south from the Harpers Ferry Road to the southern end of the Unseld farm. A creek flows through this ravine, draining the large spring at the south end of the Unseld farm. The second quarter mile of Road U (the Fire Road), ascending from Harpers Ferry Road, also passes through this ravine.

The south end of this plateau commences at an abrupt 100 ft-bluff towering over Harpers Ferry Road. Another deep ravine defines its western edge. The plateau gradually ascends toward the north where it joins the cultivated fields of the Unseld farm. The National Park Service boundary bisects this plateau as it runs northeast toward the southeast corner of the Unseld farm. The plateau lies approximately 1,100 ft west of the Naval Battery.

When the 7th Maryland established its camp at this location on December 22, 1862, Sgt. James W. Kirkley described his new home as a "bald, bleak knob." Although not specific with his description, Kirkley recalled the tents of the regiment "provided with heating arrangements of all possible patterns, the material for which in the shape of bricks and iron plenty was discovered in abundance among the ruined arsenal of Harper's Ferry." Kirkley also stated the regiment "graded off" a regimental parade ground and constructed a "substantial guard house" at its winter encampment.[41]

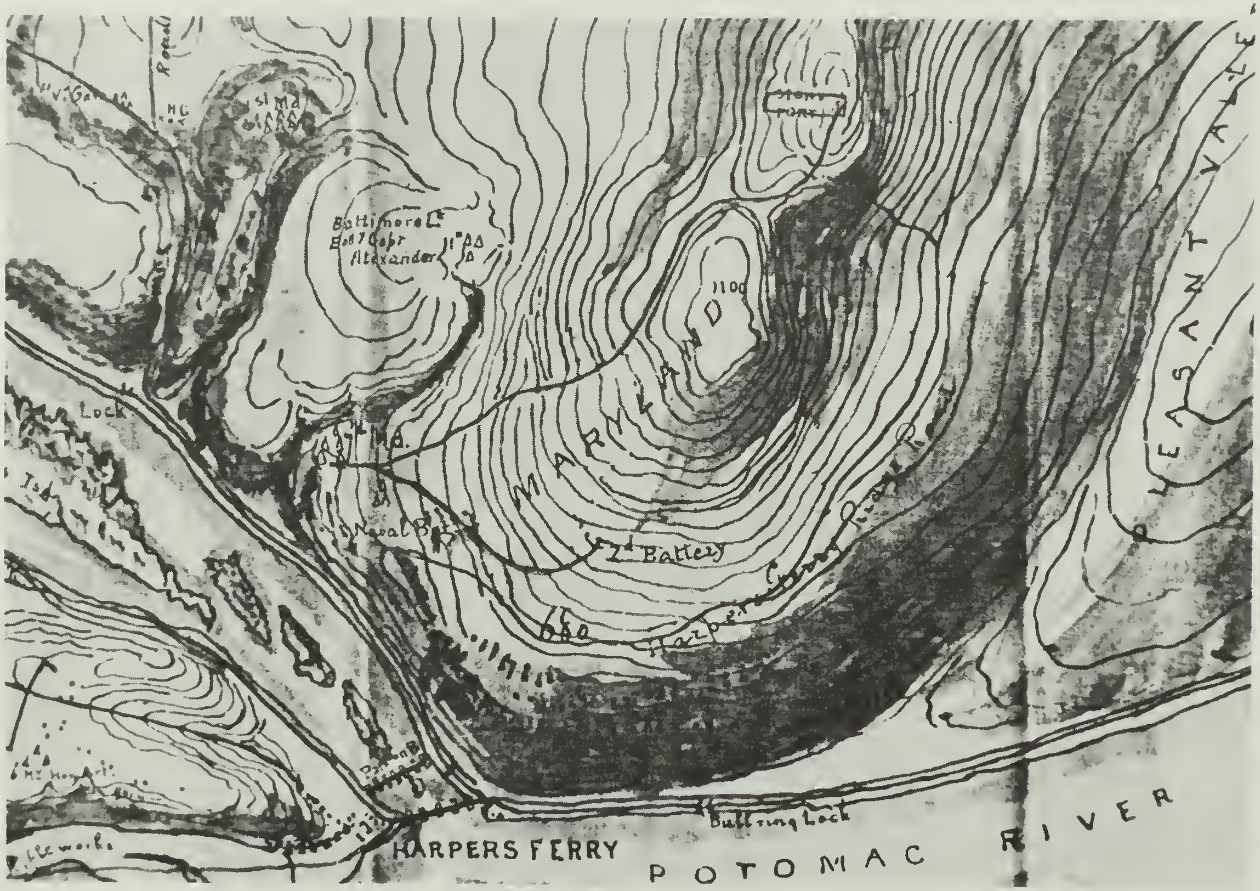

Road
Baltimore Ct.
Batt'y Capt
Alexander
MARYLAND
1100
2d Battery
Naval B'y
660
Lock
Bullring Lock
HARPERS FERRY
POTOMAC RIVER
PLEASANT VALLEY

Figure 6.11 Detail of Maryland Heights Campgrounds and Defenses by George Kaiser, January ,1863. North toward top of map. (National Archives)

The 7th Maryland abandoned its camp on April 3, 1863, when Kenly's Maryland brigade received orders to march to the Harpers Ferry side of the Potomac. It remains unknown whether or not another regiment immediately occupied this plateau.[42]

From July 12-14, 1863--following the reoccupation of Maryland Heights by the Federals during the Gettysburg Campaign--the 34th Massachusetts Infantry pitched its shelter tents upon "a little triangular plot of clear ground, some two hundred feet from the river."[43] This probably describes the plateau formerly occupied by the 7th Maryland Infantry. Evidence supporting this contention comes through the letters of Pvt. Henry H. Saunders, a hospital steward with the 34th Infantry. In his letter dated July 12, Saunders notes: "We have got here a hospital in an old log hut among some young pine sprouts." The log hut probably refers to the former home of Mrs. Buckles, located midway between the Naval Battery and the plateau upon which the 34th Infantry encamped.[44]

Two years prior to the arrival of the 34th Massachusetts, this plateau probably served as the first Union camp site on Maryland Heights. On July 29, 1861, seven companies of the 2nd Massachusetts Infantry "climbed up a steep, rough road" onto a the plateau "overlooking the Potomac." Nearby stood a "very neat little log farm house [managed by] a very neat-looking hostess with the romantic name of Buckles." The 2nd Massachusetts remained at this position until August 17, 1861, guarding three guns implanted on the plateau by Company A, 1st Regiment Rhode Island Artillery.[45]

Although this plateau certainly hosted additional occupants during the war, others who bivouacked at this site remain unknown.

During this study, the archeology team conducted a walkover of this plateau, but discovered no evidence of Civil War occupation. Extensive cultivation had occurred here during the past century, probably obliterating any features associated with the war.

Encamped Upon Maryland Heights, but Location Unknown.

Contemporary documents often identify units encamped upon Maryland Heights, but these historical records seldom provide information on an encampment's precise location. The two sources which best pinpoint encampment sites and occupants are George Kaiser's January, 1863, illustrations and Col. P. A. Porter's July, 1863, map. Morning Reports for two heavy artillery units--the 1st Massachusetts and the 5th New York--also yield information on camp location. Other sources, such as regimental diaries and personal letters, usually define encampments by geographic areas--terms such as the crest, the western base of the mountain, and halfway up the ridge appear often. Such vague references reveal little, however, regarding campground location.

The section below discusses occupation in geographic terms, and not by specific campgrounds.

The Crest. When Kenly's Maryland Brigade occupied the plateau between Maryland Heights and Fort Duncan in mid-December, 1862, the 1st Maryland Infantry detached Company K to the crest of Maryland Heights to perform picket and guard duty. This company remained in this position until the first week of April, 1863.[46]

The harsh winter weather upon the crest exacted its toll on the Marylanders. In a March 5, 1863, report on the condition of his troops, 1st Maryland commander Col. N. T. Dushane informed General Kenly:

> I would beg leave to call attention to the quarters of the troops at the outter [sic] Battery [the howitzer battery north of the Stone Fort]. . . . Owing to the bare exposed position of the place and the prevalence of high winds in the winter season it is almost impossible to keep the tents standing, and even if it was the winds would whip out and destroy the canvas in a short time.[47]

To improve the quarters of his men, Dushane recommended the government furnish boarding for roofs, floors, and walls. As the colonel concluded: "Huts could be built . . . at less cost than tents could be furnished, and when once built would last for years."[48]

Dushane's "condition report" suggests that Company K had quartered in tents during its stay upon the crest (for three winter months) with obvious dissatisfaction. Kaiser fails to show this camp on his January, 1863, map, probably because the site served only one company. As a result, the location of this camp remains unknown. Since the company left the mountain one month after Dushane's report, it becomes doubtful the huts he recommended were constructed.

Following the withdrawal of the 1st Maryland's Company K from the vicinity of the Stone Fort, Company D and Company M of the 6th New York Heavy Artillery reported at this position on April 12, 1863. Company M remained on the crest until the evacuation of June 30, 1863; Company D left the mountain twelve days prior to this evacuation.[49]

During their stay, these two companies primarily performed picket and guard duty upon the crest. They established "Camp Kitching" (named in honor of regimental commander J. Howard Kitching), but its location on the crest remains unknown.[50]

Other regiments occupied the crest during Confederate threats in the summers of 1863 and 1864 (see historical overview section), but any camp sites associated with these occupations remain unknown.

Plateau North of Naval Battery. Following the Battle of Antietam on September 17, 1862, and the subsequent Confederate retreat into Virginia, Maj. Gen. George B. McClellan ordered Union forces to reoccupy Maryland Heights. On September 22, the 1st and 3rd Brigades of the 1st Division of the Twelfth Corps prepared to ascend the mountain; and within two days, both brigades had encamped on the mountain's southwestern edge. Four days later, the 1st Brigade returned to Pleasant Valley "to a less exposed place"; but during the first week of October, this brigade transferred back to the southwest side of the heights. For the most part, the 1st and 3rd brigades--numbering approximately 2,500 men--remained in this position until December 9, 1862.[51]

Maj. Gen. A. S. Williams, commander of the Twelfth Corps, described the campground location of these two brigades as "[h]alf way down the Maryland Heights on a considerable plateau, where are the big-ship Dahlgren guns." Miles Huyett, of the 125th Pennsylvania Infantry (1st Brigade), also alluded to the Naval Battery when he noted "we bivouacked, without shelter, above where the fifty-pounder rifled guns had emplacements." A soldier in the 2nd Massachusetts Infantry (3rd Brigade), who had encamped with his regiment on a plateau west of the Naval Battery in August, 1861, recalled some changes: "The place did not look natural," the Bay State soldier reported. "The land had been stripped of its trees; and the old paths to the spring, and down to the river, were bald and shelterless."[52]

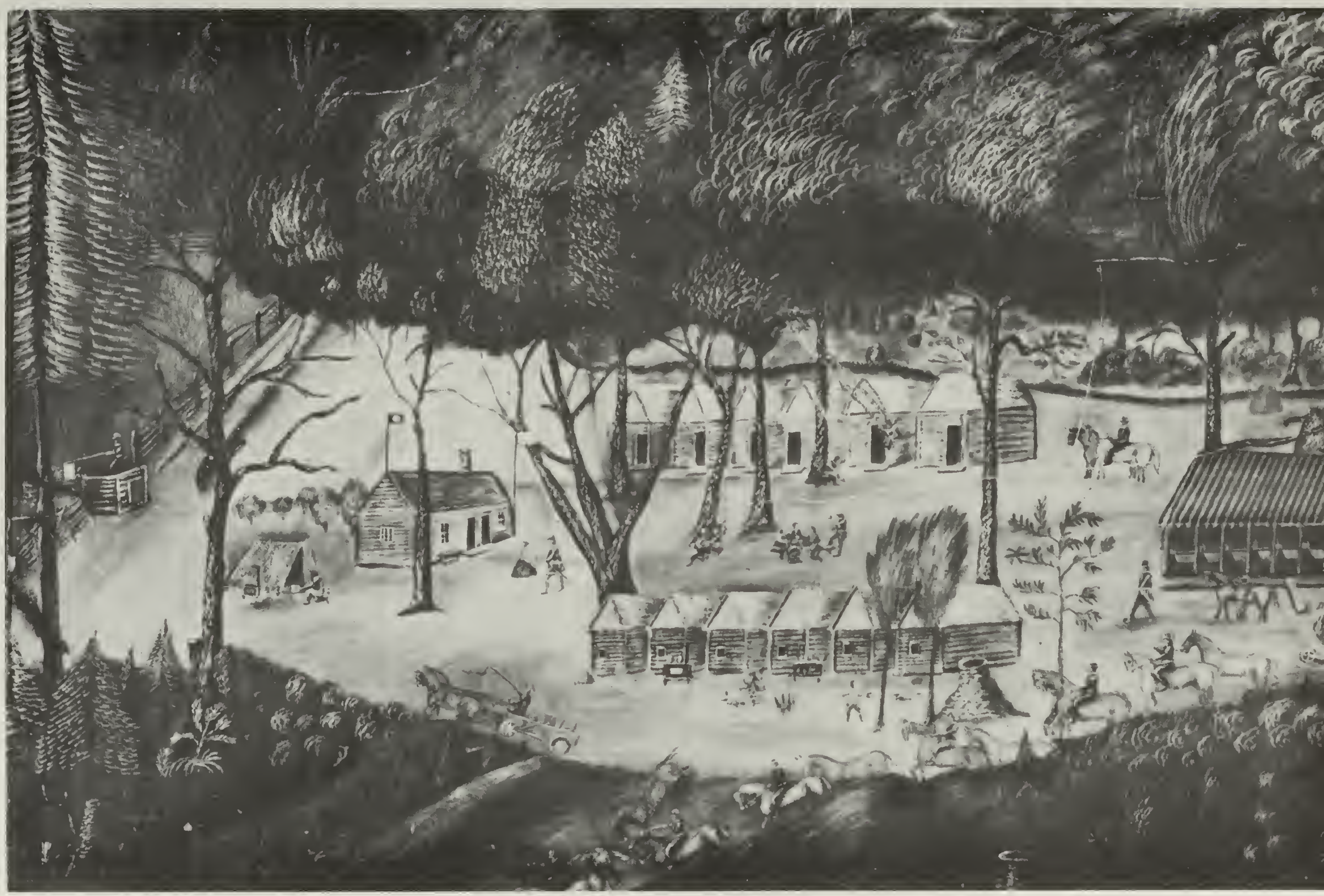
Although precise locations of regimental encampments within these two brigades remains unknown, allusions to a plateau above the Naval Battery suggests at least one brigade (probably the 2nd) established its tents on the broad, rocky, gently sloping shelf which runs north from the Naval Battery. Although archeological surveys examined this area for features, no definitive foundations were discovered. This does not preclude occupation, however, since neither brigade constructed winter quarters on this plateau. Rock removal and ephemeral ground disturbances were discerned, which likely suggests a period of occupation by "tenters."

Soldier's Illustration of Encampment on Maryland Heights. Only one known illustration exists which depicts a campground on Maryland Heights (Figure 6.12). This detailed charcoal drawing exited from obscurity in 1984 when Mrs. Mary V. Stewart Girton donated the illustration to Harpers Ferry National Historical Park.

Mrs. Girton's grandfather, Pvt. Henry James Stewart, served in a signal corps detachment assigned to the Maryland Heights defenses from June through August, 1864. According to Mrs. Girton, Private Stewart gained possession of the drawing through a friend whom Mrs. Girton believes also served in the signal corps.

The artist unfortunately is unknown, and location of the signal corps camp also remains unknown. Contemporary documents do reveal, however, that 60 signalmen divided and operated three stations during Jubal Early's advance in July, 1864. One station signaled from the crest of Maryland Heights; a second stood one mile west at Fort Duncan; and a third operated midway between these two points at Maj. Gen. Franz Sigel's headquarters.[53]

Figure 6.12 Charcoal drawing of signal corps campground on Maryland Heights, Summer, 1864. Artist unknown. (Harpers Ferry NHP)



Since this signal corps detachment served the Maryland Heights defenses for only three summer months (June-August, 1864), it is unlikely the signalmen constructed the encampment depicted in the drawing. The substantial buildings illustrated by the artist fit the description of winter quarters. No doubt the signalmen occupied this camp long after its original builders had transferred elsewhere.

An illustration of this type runs a high risk of artistic license, and the artist's inclusion of typical camp scenes--such as the banjo and fiddle players entertaining card players while a solitary soldier "swings" by (see center of drawing)--casts some doubt on the accuracy of the scene. The artist's careful attention to architectural details, however, lends credence to his work. Steps lie in front of open doors; boards on sidewalls stand out as distinct; windows and entryways show uniform placement and dimension; and stable stalls include feeders and water troughs.

The best example of the artist's detail appears on the building at the far left of the encampment. The window on the gable end displays six-over-six lights; conversely, the two windows facing the center of the encampment contain four-over-four lights. Such exactness demonstrates the artist's careful presentation of details. As a result, this drawing undoubtedly represents an accurate portrayal of winter quarters on Maryland Heights.

Since the drawing includes no landmarks to determine cardinal directions, the center of the illustration best serves as the primary point of reference in the following analysis.

Twelve cabins or huts, aligned in two parallel rows of six, dominate the center of the encampment. Since the camp lies on an ascending slope, the top row of cabins sits much higher than the bottom row. Each cabin is rectangular, with sidewalls comprised of boards or logs supporting a steep gabled roof. Each cabin includes one entrance and one window at opposite gable ends. Each entry abuts against a cabin's right wall and is preceded by an outside step. Small offset square windows grace the cabin's rear wall. The light-colored roofs probably denote a canvas covering, but this fact remains uncertain. The drawing has no scale, so dimensions cannot be determined. A soldier in Alexander's Baltimore Battery of Light Artillery, who encamped in winter quarters on Maryland Heights, remembered a cabin generally held four to six people. If this rule holds true for the cabins in this drawing, these buildings housed 48 soldiers.

The structure at far right obviously represents a stable. Five stalls and a portion of a sixth appear in the illustration, and feed bags and water troughs dominate the interior of each stall. Logs or boards apparently comprise the gable roof, and interior walls appear to separate each stall.

The most sophisticated building in the encampment stands at the left. Two center doors, flanked by two windows--all arranged in perfect symmetry--face toward the center of the campground. The windows comprise the most curious detail of this structure since they are the only windows in the drawing with frames and glass panels, and these probably were removed from a nearby residence. The building is rectangular and stretches perhaps twice the length of its neighboring cabins. Board or log walls support the gable roof, the composition of which cannot be determined. A chimney stands near the building's upper side; and with this exception, no other structure in the drawing has a chimney. Two flags fly over this building, suggesting its use as a headquarters or officers' boarding house. The structure may also be a messhall.

Only one tent appears in the drawing--a solitary wedge tent below and to the left of the structure just described. This perhaps belongs to a servant, lending credence to the suggestion that the building on the left housed officers. A small stove appears just outside the tent. In fact, two ten-plate cast iron stoves (which provide heat during the winter), have been removed from several buildings during the summer and now stand outside the lower row of cabins.

Camp boundaries also caught the artist's attention, and these features deserve notation. A serpentine stone wall defines the upper side of the camp, and a precipitous slope with low-lying vegetation denotes the lower side. A steep road paralleled by a post and rail fence delimits the encampment's left boundary, and an open field of grass (or some other crop) lies left of this fence.

Although the location of this encampment remains a mystery, the post and rail fence and open field suggest its proximity to a domestic site. The stone fence also suggests domestic habitation; but in this case, soldiers probably built the fence when they cleared their campground of stone.

Frederick Wild's description of his camp site during the winter of 1862-1863 bears a remarkable resemblance to the encampment illustrated by the artist. Wild served in Alexander's Baltimore Battery of Light Artillery, which encamped on a plateau above Unseld's farm on the western side of the mountain. According to Wild, "sheds were built for the horses . . . and groups of four or more built log cabins." Wild described his cabin as follows:

> Our little group of five built our cabin on the brow of a hill, we dug down about three feet and leveled a space of about eight by ten feet, the sides were built of logs and the chinks filled in with clay; the roof was laid with saplings covered with the earth which we dug while leveling the space.[54]

Wild also noted that each cabin permitted use of a stove or hearth for cooking.

The plateau, cabins, stable, and stoves Wild discusses all appear in the drawing. If the cultivated field in the illustration belongs to Unseld, then the signal corps detachment possibly occupied the winter encampment utilized formerly by Alexander's Baltimore Battery of Light Artillery.

Confederate Encampments, Spring, 1861

From late April until mid-June, 1861, Southern forces occupied Maryland Heights. Virginians first encamped upon the mountain, but border state soldiers from Kentucky and Maryland soon replaced the Old Dominion men. When the Confederates evacuated Harpers Ferry in mid-June, 1861, the Southerners abandoned Maryland Heights as well. With the exception of three days during the siege and capture of Harpers Ferry (September 13-15, 1862), Confederate forces never again occupied Maryland Heights in strength.

Less than one week after the mid-June, 1861, Confederate evacuation, a New York Herald correspondent ascended Maryland Heights and filed a report on his excursion. After "tedious clambering over rocks and among thick bushes," the reporter ascended a road on the east side until he reached a camp formerly occupied by the Kentucky battalion of Lt. Col. Blanton Duncan. After stating only 190 men comprised Duncan's force "when [it] retreated," the reporter described the Kentucky encampment:

> Here we found twenty-six small cabins, constructed of chestnut trees, sloping backwards from the top, the front part being about twelve feet high, and the back part seven or eight. This slope was given them in order to have them roofed cabin fashion. . . . Around them lay several thousand feet of boards, evidently intended for roofing purposes. In some of them rude, unhewn pole berths were put up, so that two rows of sleepers could enjoy the luxury of open quarters and an open sky.

The double row of cabins stood sixty feet apart, with a rough and uneven parade ground "full of stumps" lying between the rows. The correspondent interjected his opinion of the camp and cabins when he declared: "They were the rudest structures I ever saw, save hunters lodges among the Rocky Mountains, [as] these are built with an eye to protection against all kinds of weather inclemencies, whilst these even if roofed would not have prevented the entrance of rain from all sides."[55]

Unfortunately, the reporter provides only a vague reference to the location of this encampment. He identifies a "depression in the ridge" immediately south of the Kentucky camp. This possibly suggests the small saddle on the crest which separates high points upon which sit the Stone Fort and the 100-pounder Battery. If the reader accepts this hypothesis, then the Kentucky camp probably set on the plateau immediately south of the Stone Fort (Campground Area 4) or on the plateau located below the Fort on the east side of the mountain (Campground Area 5).

In fact, after walking south over "this depressed piece of crest," the reporter again ascended to a point where he discovered "about a dozen rude cabins" which showed less architectural skill than the others he had just witnessed. The reporter identified this site as "Lower Bradleyville," after Bradley T. Johnson, whose headquarters stood just east of these cabins, and who commanded the Maryland secessionist companies posted upon Maryland Heights. The reporter noted both the Maryland and Kentucky cabins were constructed "without any regard to military order."[56]

Again, if the reader accepts the supposition that the reporter has walked south from the vicinity of the Stone Fort to the 100-pounder Battery, then "Lower Bradleyville" occupied the 100-pounder Battery area (perhaps Campground Area 6 or 7).

When Capt. John Newton, chief of engineers for Maj. Gen. Robert Patterson's Federal army, reconnoitered Maryland Heights during the last week of June, 1861, Newton made no mention of any Confederate encampments or fortifications. Newton either failed to travel far enough south on Elk Ridge to discover these sites; or, as General Patterson complained, "This report is not as full as I desired it to be."[57] In fact, no Federal accounts make any mention of Confederate encampments upon Maryland Heights.

CAMPGROUND AREA DESCRIPTIONS

Methodology

Known points established during controlled survey traverses (see Methodology section under Fortifications) provided initial bearings for the mapping of features in the campground areas. Within the campground areas, reference, or datum points were established to facilitate measurements for individual features. Using a transit and leveling rod, points were recorded for each feature to define its form and dimensions. Measurements also were noted for such attributes as depth of depressions and height of walls, and notes were recorded for each feature on a separate form.

After completing the fieldwork, Maryland State Grid coordinates were computed for each point and plotted on graph paper. In conjunction with information recorded in the field notes, the points then were connected to form the outline of the feature.

This study defined a campground area as a site that contained remains of stone hut foundations, leveled platforms, depressions, and ephemeral ground anomalies. Features were located by conducting extensive walkovers across the campground areas and flagging visible anomalies. Photographs recorded both major unique features and features representative of the campground areas. Most features were cleared of vegetative overgrowth prior to photographing (Figures 6.13 and 6.14).

Each campground area was assigned a number when mapped. Thus, the first campground recorded during this project was labeled Campground Area 1. In turn, each feature was assigned a unique number that began with the campground area designation. For example, the fifth feature recorded in Campground Area 9 was identified as Feature CA9-F5. Terraces proved an exception, and did not receive feature numbers.

Campground Area 1 (18WA395)

Campground Area 1 (CA1) lies along a narrow plateau stretching from the north breastwork of the Interior Fort northward to the park boundary (Figure 5.13). The crest bounds the campground on its east side; a steep slope defines the western edge. The plateau continues north of the park, as does the campground area. The total area embraced by Campground Area 1 within the park boundary approximates three acres.

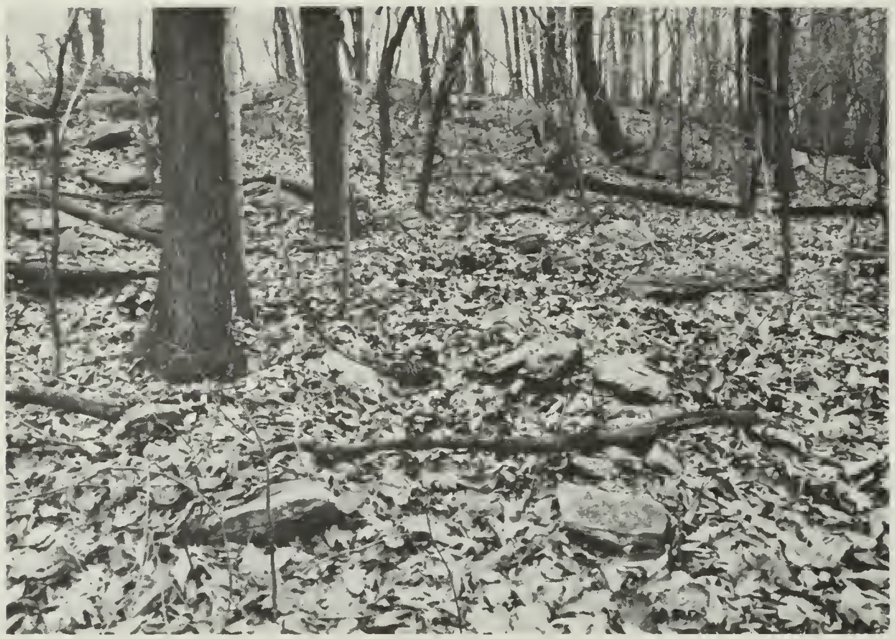


Figure 6.13 Campground Area 1. Feature CA1-F7, looking south. Photograph before removal of leaves and branches. The feature is in the foreground; the crest in the background.

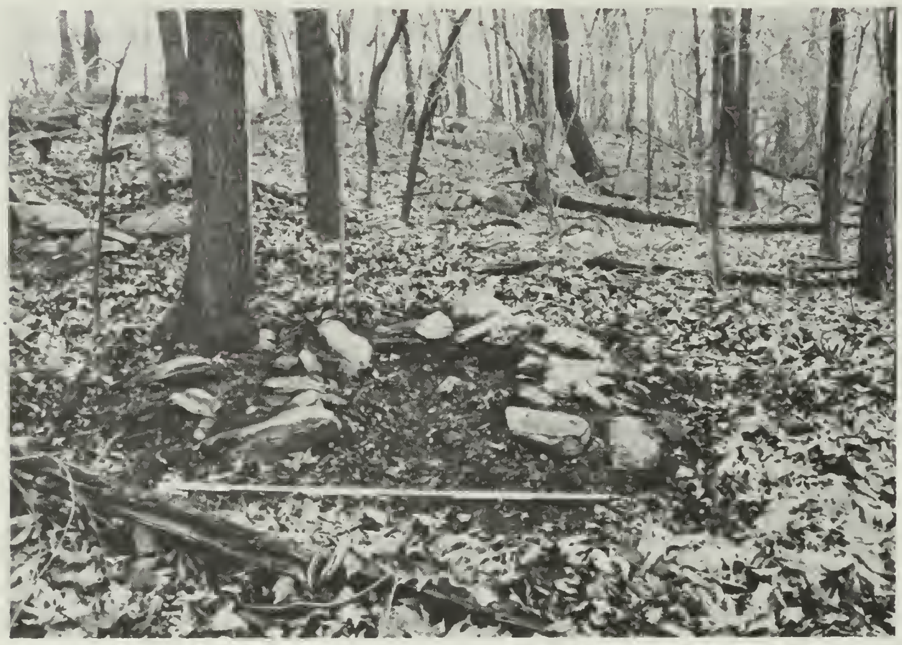


Figure 6.14 Campground Area 1. Feature CA1-F7, looking south. Photograph after removal of leaves and branches.

A narrow, rocky spine defines the crest along the east side of the campground area. A wide gap in this ridge permits the passage of Road H, a major road trace extending up the east flank of the mountain, onto the level plateau. Once on the crest, the road quickly fades out (Figure 6.15).

A second primary road trace--Road JJ--extends into the south end of the campground after passing between the Interior and Exterior Forts. These two roads probably once connected with each other, but all evidence of a juncture has been obliterated. In the northwest corner of the campground area runs a narrow road trace (Road II) that extends up the west side of the mountain and also fades out once it reaches the crest.

Just north of the Interior Fort, along the east side of Campground Area 1, lies a cluster of thirteen features. The majority of these features sit on the short, rocky slope forming the west face of the narrow ridge top, rather than on the level plateau below. Much of the stone lying on this slope may have originated from the plateau, as the ground surface along the plateau presently is virtually free of stone.

This cluster of thirteen features is comprised of stone structural foundations and rectangular, leveled platforms. It appears that additional structures also stood in this area, but their remains could not be delineated clearly enough to map. The recorded stone foundations were constructed of dry-laid fieldstone crudely stacked on top of each other.

The center of this complex of features consists of six stone foundations--Features CA1-F5 to CA1-F10--roughly align in two rows. Half of the features open in a general westward direction, the other half toward the north. The interior dimensions of these foundations average about 6 x 5 ft; the smallest measures 4.5 x 3.5 ft (Feature CA1-F7) and the largest 7 x 5 ft (Feature CA1-F10). All are three-sided except Feature CA1-F6, which has an apparent entrance in the southwest corner open toward the west. The west row of features rests against the base of the narrow ridgetop, while the second, higher row extends across the slope.

On the south side of this group of stone foundations are two leveled platforms. These two platforms differ from each other in size--6 x 4 ft for Feature CA1-F1 and 13 x 9 ft for Feature CA1-F2. Both form a rough alignment, however, with the east row of stone foundations.

The northernmost feature in this cluster is Feature CA1-F12, a circular Sibley tent platform cleared of stone and measuring 17 ft in diameter (Figure 6.16). Surrounding the circle is a shallow ditch about two feet wide lined on its exterior side with stone. This platform sits on top of the crest. Near the east edge of the crest, in this same area, is a small, basically square (4.6 x 4.4 ft) and shallow stone-lined pit with a stone base (Feature CA1-F13).

Completing this group of features are three, dry-laid stone alignments (Features CA1-F3, CA1-F4 and CA1-F11) scattered along the west edge of the crest. West and north of the cluster of features as a whole, the ground surface along the level terrace only hints at extensive military occupation. Slight undulations and anomalies suggest numerous features too vague to be mapped with accuracy.

The only additional features recorded within Campground Area 1 are two dry-laid stone foundations situated alongside Road H. On the summit, near the point where the road fades out, sits Feature CA1-F14, the poorly-preserved remnant of a fairly large structure measuring at least 15 x 10 ft along its exterior sides. Only two walls presently remain definable.

The second foundation--Feature CA1-F15--perches above Road H near the top of the narrow ravine through which the road passes. This feature has a small interior (6 x 4 ft) surrounded by thick walls which stand about 1.5 ft high. On the south side of the foundation, a probable entrance opens toward the road. The faint trace of a pathway can be discerned leading from the entryway to Road H.

Campground Area 2 (18WA396)

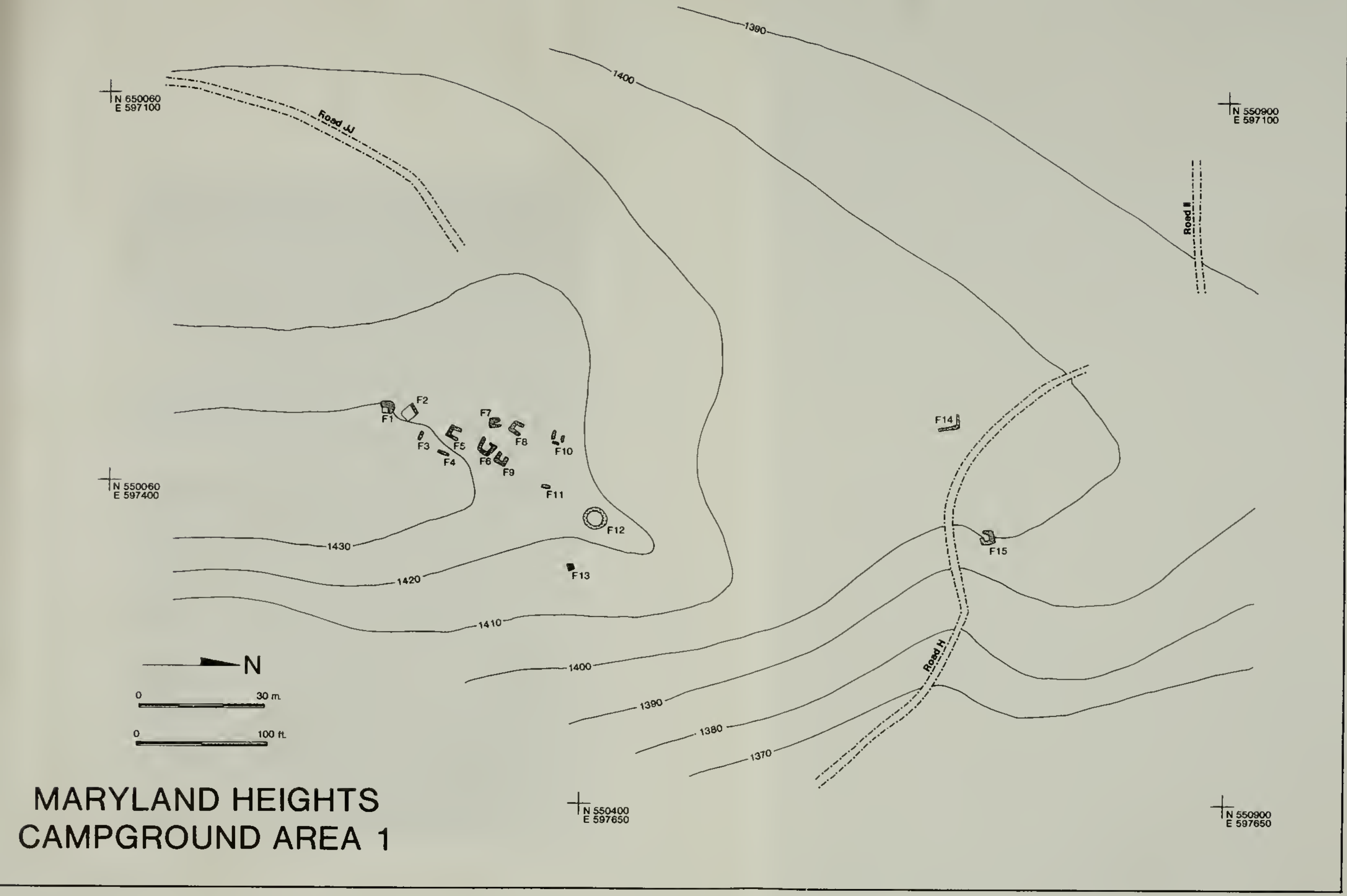
Campground Area 2 (CA2) stretches across a long, narrow plateau situated below the west edge of the summit (Figure 5.13). A short, steep slope leads from the plateau to the top of the narrow, rocky crest. The base of this slope delineates the eastern boundary of the campground area. The south breastwork of the Exterior Fort defines the northern end, while a heavy concentration of stone at the south end of the plateau marks the southern extremity.

Definition of the western boundary of Campground Area 2 is more problematic. Along its northern half, the site essentially is bounded by Feature CA2-F2, a meandering rubble wall that extends from the ditch on the south side of the south Exterior Fort breastwork southward along the edge of the plateau for about 750 ft (Figure 6.17). Although this wall basically defines the western limits of the campground area, some faint, leveled platforms, all cut into the slope, appear on the west side of the wall. The south half of the west boundary is defined by Road U (the main fire road) which runs along the west edge of the terrace (Figure 6.18).

The boundaries outlined above enclose 9.5 acres. Although the campground area is long--approximately 1,650 ft, it averages a narrow 250 ft in width. Almost the entire 9.5 acres shows evidence of extensive occupation; however, three primary groupings, or clusters, of stone features are evident. The gaps between these clusters contain ephemeral, leveled platforms that appear to be in alignment with each other. The elusive nature of these faint anomalies precluded their inclusion in this survey.

On the extreme northern end of Campground Area 2 sits a large, isolated, dry-laid stone foundation (Feature CA2-F1). This structure lies about 25 ft south of the only entrance into the Exterior Fort, and effectively blocks any direct approach to it. The feature consists of two abutting structural

MA
CAM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E 597100
Road JJ
1400
1390
N 550900
E 597100
Road II
F1
F2
F3
F4
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F6
F7
F8
F9
F10
F11
F12
F13
F14
F15
N 550060
E 597400
1430
1420
1410
1400
1390
1380
1370
Road H
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30 m.
0
100 ft.
N 550400
E 597650
N 550900
E 597650

MARYLAND HEIGHTS
CAMPGROUND AREA 1

Figure 6.15

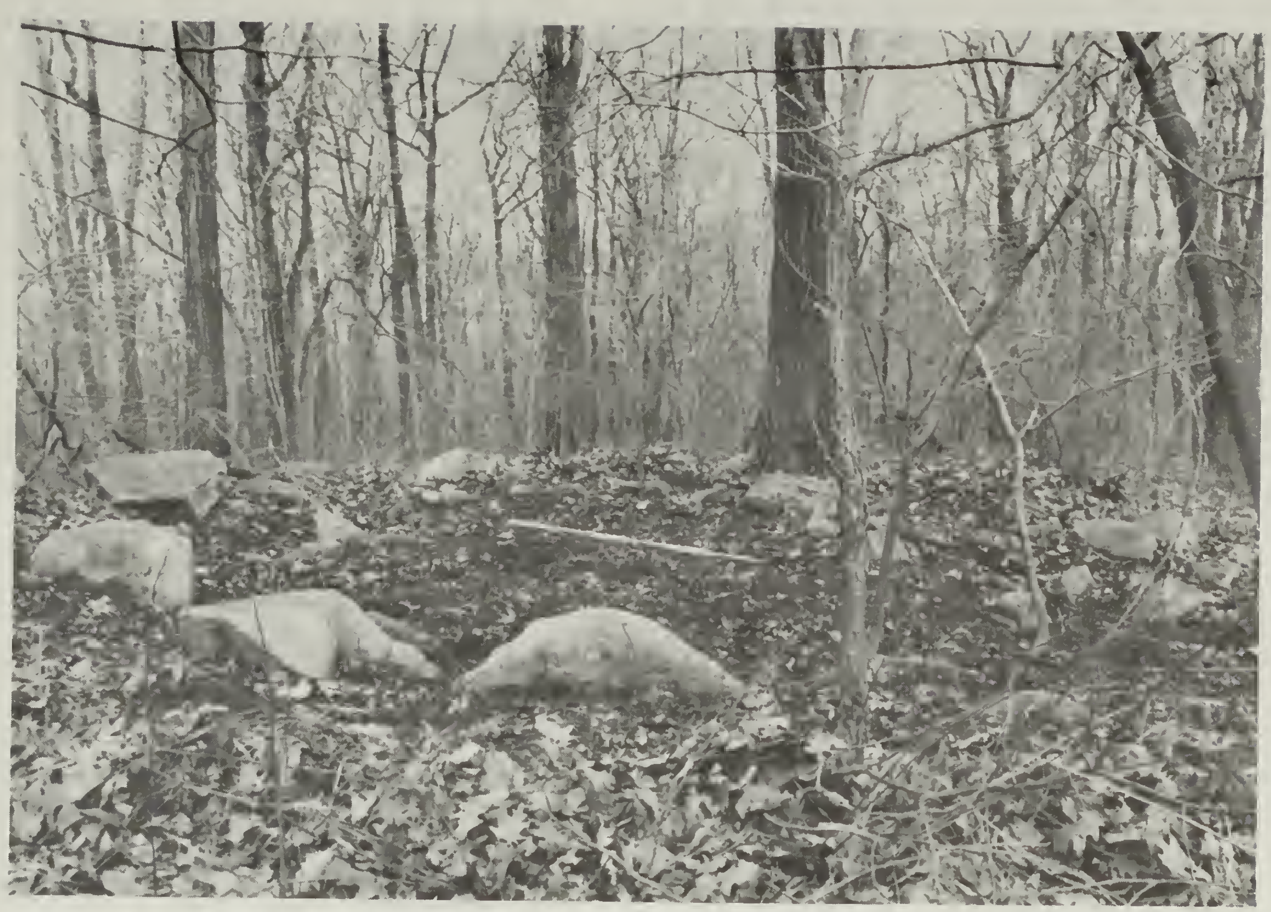


Figure 6.16 Campground Area 1. Feature CA1-F12, looking northwest. Note stone ring around edge of platform.

foundations, with the one on the north side the more substantial and earlier of the two. The exterior dimensions of this north half are 20 x 18 ft; its interior is filled with rubble. Surface indications suggest the north side opens toward the west.

Abutting against this structure on its south side is a two-sided, crudely-constructed stone foundation comprised of mounded rubble along its east and south sides. Another wall along the west end also abuts against the north structure. The exterior dimensions of this south half measure roughly 18 x 15 ft.

The ground surface immediately surrounding Feature CA2-F1 is extremely rocky, with no surface indications of additional features, nor of a road extending to the Exterior Fort entrance. About 50 ft southeast of Feature CA2-F1, however, within this rocky area, sits a second, smaller dry-laid stone foundation (Feature CA2-F3) with interior dimensions of 5 x 4 ft and open to the south. This feature is located at the base of the steep slope leading to the Interior Fort.

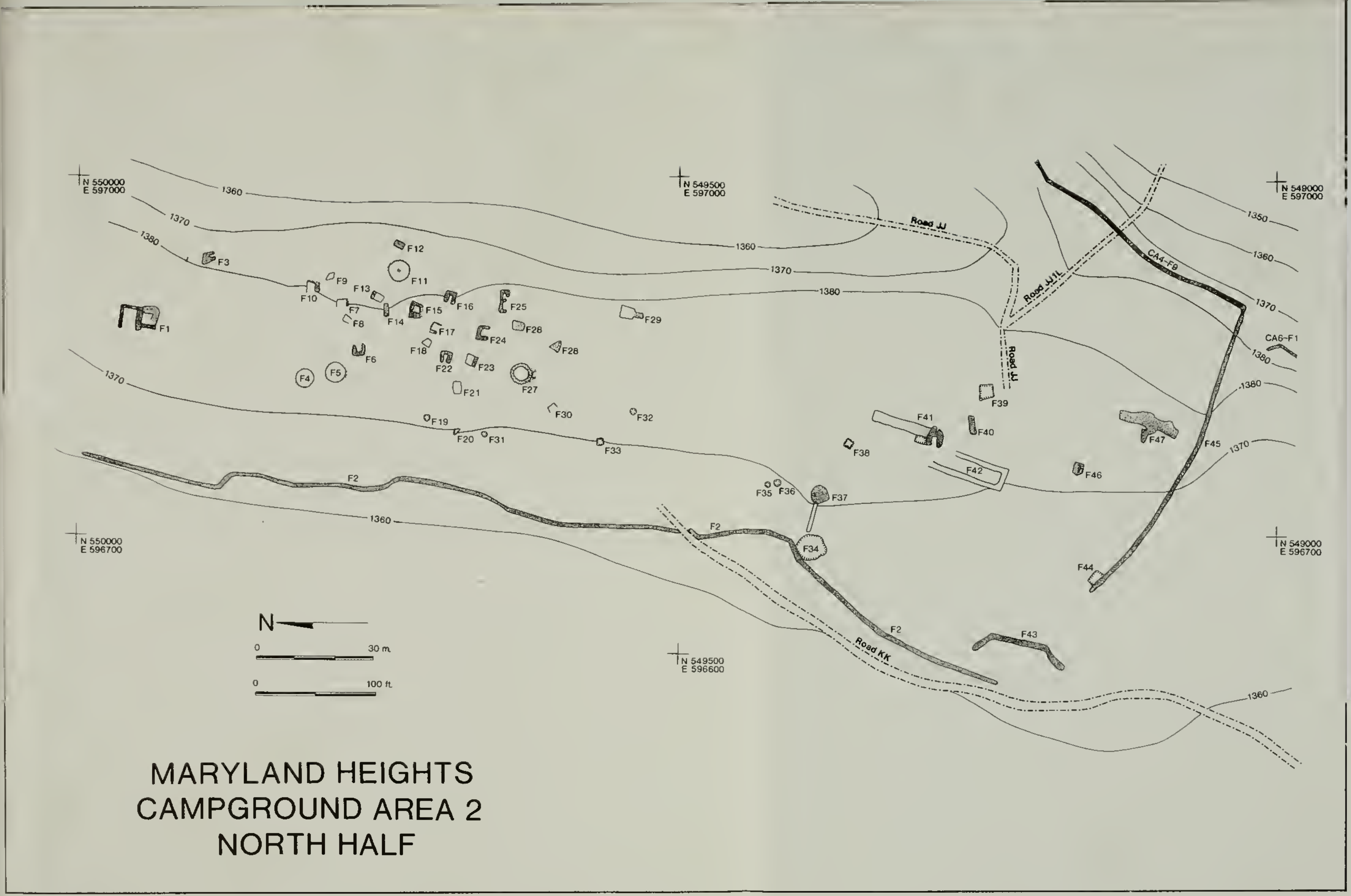
North Group of Features. Beginning 120 ft south of Feature CA2-F1 is a substantial cluster of features concentrated along the east side of Campground Area 2, near the base of the steep slope to the crest. These features consist primarily of dry-laid stone foundations, rectangular platforms lined with stone, and circular platforms also outlined by stones. Although the features themselves have been cleared of stone, the ground surface surrounding them remains very rocky. Many of the features in this area are poorly defined and tend to blend with the stony ground around them. As a result, only readily-definable features were mapped as part of this project.

The largest foundation within this group, Feature CA2-F25, is located against the base of the slope which defines the east boundary of this campground area. Oddly shaped, it appears to contain two chambers which share a rubble wall 20 ft in length along their north sides. A short wall stub extending 2.5 ft from the main wall separates these chambers. The eastern chamber is the better defined of the two, with interior dimensions of 5 x 3 ft. The other side appears heavily disturbed.

Most of the stone features in this first group lie north of Feature CA2-F25. Those closest to that large foundation lie in a readily apparent east-west alignment to each other. The stone features in the north half of this cluster, from Feature CA2-F15 northward, appear to be only roughly aligned.

Near the center of the north cluster of features stands Feature CA2-F15, the best-preserved stone foundation in this group. The interior dimensions of this feature, 6 x 5.5 ft, compare to those of other foundations in this group. This feature is the only one, however, with a defined, enclosed entryway.

N 5
E 5
N 55
E 59


MARYLAND HEIGHTS
CAMPGROUND AREA 2
NORTH HALF
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E 597000
N 549500
E 597000
N 549000
E 597000
N 550000
E 596700
N 549500
E 596600
N 549000
E 596700
1350
1360
1370
1380
Road JJ
Road JJ1L
Road KK
CA4–F9
CA6–F1
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
F13
F14
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F16
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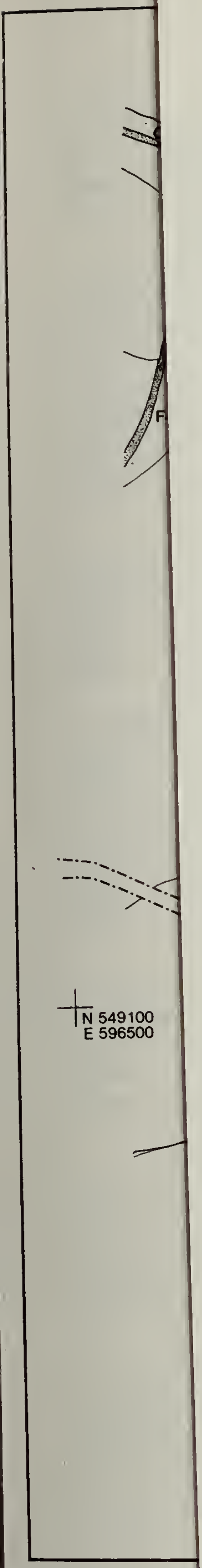
100 ft

Figure 6.17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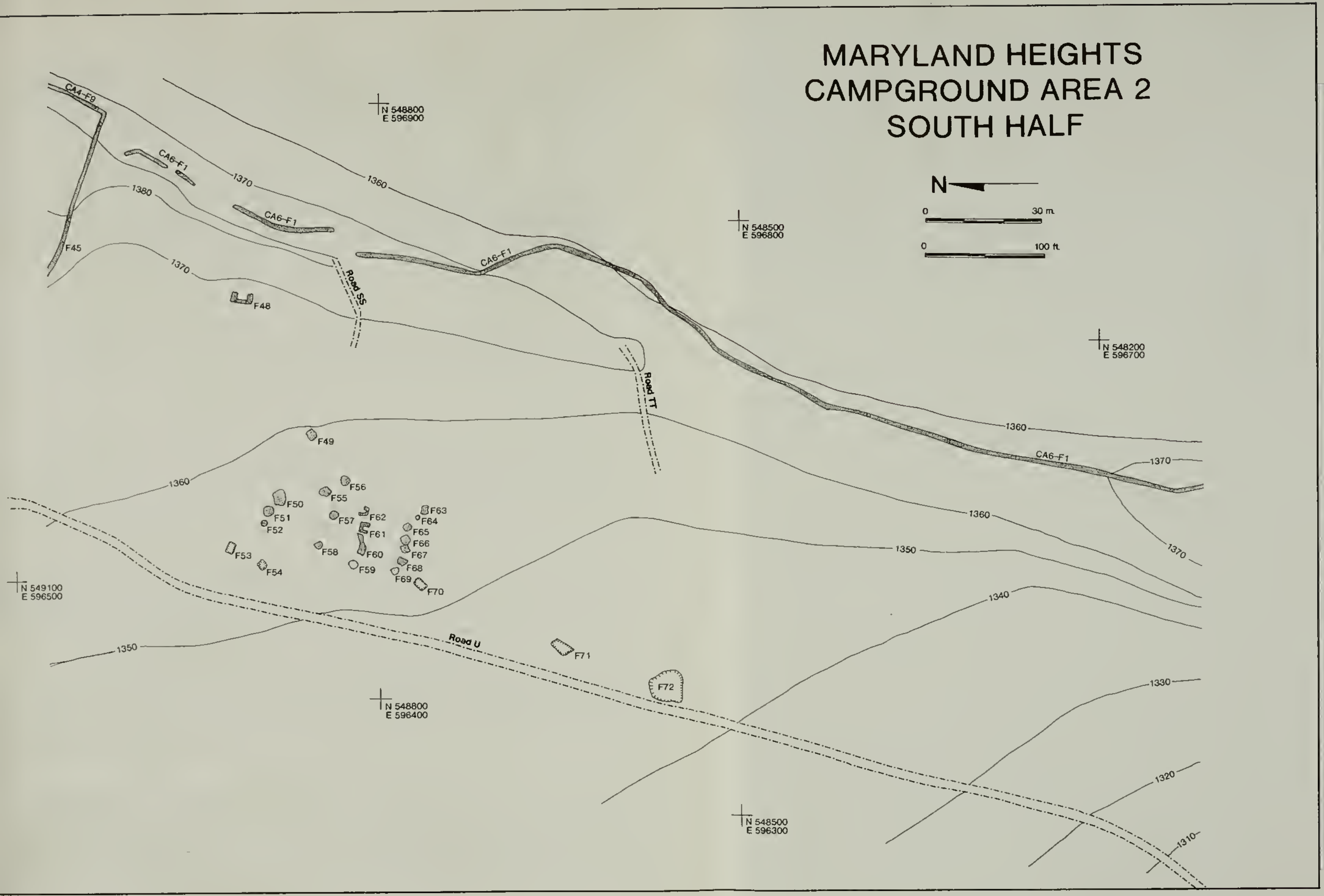
E 596500


MARYLAND HEIGHTS CAMPGROUND AREA 2 SOUTH HALF
N
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30 m.
0
100 ft.
N 548800 E 596900
N 548500 E 596800
N 548200 E 596700
N 549100 E 596500
N 548800 E 596400
N 548500 E 596300
CA4-F9
CA6-F1
CA6-F1
CA6-F1
CA6-F1
1380
1370
1360
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1370
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1350
F45
F48
Road SS
Road TT
Road U
F49
F50
F51
F52
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F72

Figure 6.18

Scattered between the stone foundations appear leveled, rectangular platforms with surfaces cleared of stone. These areas are definable due to the rocky nature of the surrounding ground surface. As the rocks diminish near the edge of the cluster of stone features, definition of these platforms becomes increasingly difficult.

Around the periphery of the stone features are four circular platforms remarkably similar in size--15 to 16 ft in diameter--and defined primarily by stones along their exterior edges. In the center of one platform (Feature CA2-F11) lies a small pile of stones. A faintly perceptible ditch encircles the platform of Feature CA2-F27, just inside the surrounding stone. In addition, along the south end of this feature is a rectangular-shaped rubble concentration 8 x 5 ft in extent. This concentration closely resembles a structural foundation, but it is obscured by a rubble-filled interior.

On the west edge of the cluster of features are three small circular depressions--Features CA2-F19, CA2-F30 and CA2-F31--which measure about four feet in diameter. These depressions are relatively shallow (1 to 1.5 ft deep) and lie in roughly the same alignment as the stone features east of them.

Marking the southern extent of the first group of features are Features CA2-F32 and CA2-F33 (two additional small depressions situated south of the first three) and a large platform, Feature CA2-F29, located on the east edge of Campground Area 2 against the steep slope leading to the crest. This rectangular, leveled platform measures 14 x 12 ft and is defined by scattered stone rubble around its edges. On the south side of the platform lies a roughly rectangular stone concentration with approximate dimensions of 8 x 6 ft.

The ground west of the recorded features discussed above has virtually no surface stone. Between the row of small depressions and the long rubble wall of Feature CA2-F2 exists an area characterized by at least two dozen small, barely visible leveled platforms. These platforms appear to continue downslope a short distance west of Feature CA2-F2.

To the south, between this first group of features and a middle cluster of larger, more substantial, stone foundations is another relatively level area cleared of stone. It also contains very ephemeral, aligned platforms, which appear larger than the platforms found on the west side of the first cluster of features. In this area the leveled platforms do not appear to continue west of Feature CA2-F2.

Middle Group of Features. With the exception of two small, circular depressions (Features CA2-F35 and CA2-F36), the north edge of the second group of recorded features is defined by Feature CA2-F37, a stone pile about 4.5 ft high. At first glance, no structural definition is apparent for this feature, as its base is nearly circular and the pile mounded in its center. On the northwest side, however, a distinctly laid corner stands on a rubble base about two feet above the surrounding ground surface. Both sides of this corner disappear under the rubble.

Extending from the west side of this mound is a low-lying, mounded rubble-and-earth ridge about 25 ft long and three feet wide. This alignment ends at Feature CA2-F34--a large, roughly circular hole situated along the east side of Feature CA2-F2, which curves around it. The hole is quite large, with an average diameter of 22 ft and a depth of five feet.

Feature CA2-F41, an exceptionally well-preserved stone foundation, lies near the center of this middle group of features (Figure 6.19). Constructed of small, rectangular fieldstone, this feature measures 8 x 5 ft along its crude, interior faces, and opens toward the west. Along the exterior side of the east foundation wall is a small cut-out area or chamber which measures four to five feet in length and three feet in width.

A mounded, low-lying, linear rubble embankment extends northward from this foundation's northeast corner. This alignment lies at a right angle from the embankment associated with Feature CA2-F34, although it is considerably wider than the latter (eight feet as compared to three feet).

Wedged between the linear embankment and the main stone foundation is a shallow, rectangular, rubble-filled depression measuring 9 x 6 ft. Interestingly, the exterior side of the north foundation wall is roughly faced at this point, unlike the remainder of the foundation's exterior, which consists of mounded rubble.

A very short distance southwest of Feature CA2-F41 lies yet another low-lying, mounded rubble-and-earth alignment (Feature CA2-F42). The three sides of this feature appear to form part of a rectangular foundation. The southwest and southeast corners are very distinct and lie 20 ft apart from each other. In contrast, the northern ends of the alignment fade out after extending varying distances.

Evidence suggests that Features CA2-F41 and CA2-F42 may have been associated with each other. If the east side of Feature CA2-F42 extended past the point where it presently fades out, it would have joined the southwest corner of Feature CA2-F41. Significantly, the distance between the southeast corner of Feature CA2-F42 and the southwest corner of Feature CA2-F42 equals precisely 60 ft. In addition, the linear ridges of Feature CA2-F42 follow the same orientation as that of Feature CA2-F41.

Against the base of the short, rocky slope leading to the crest stands Feature CA2-F47, a massive, dry-laid stone feature (Figure 6.20). The main part of this feature is 45 ft long, eight feet wide, and about 3.5 ft high along well-preserved parts. Small sections of wall face remain, but the majority has collapsed. The facing stones are larger than the stones used as fill behind them. Extending perpendicularly from the middle of the west side is a stone extension about 13 ft long. Well-defined walls 3.5 ft high define the three sides of this addition.

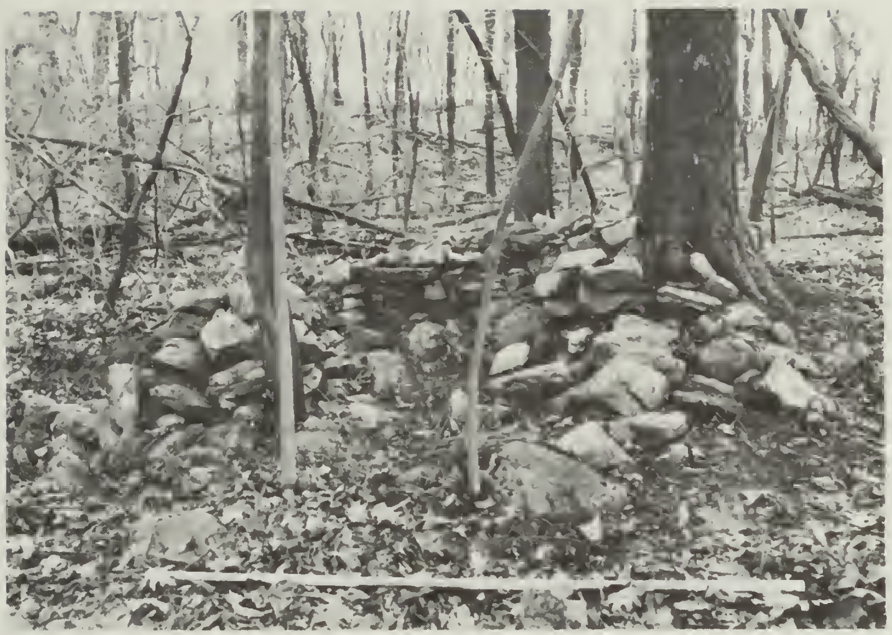


Figure 6.19 Campground Area 2. Feature CA2-F41, looking east.

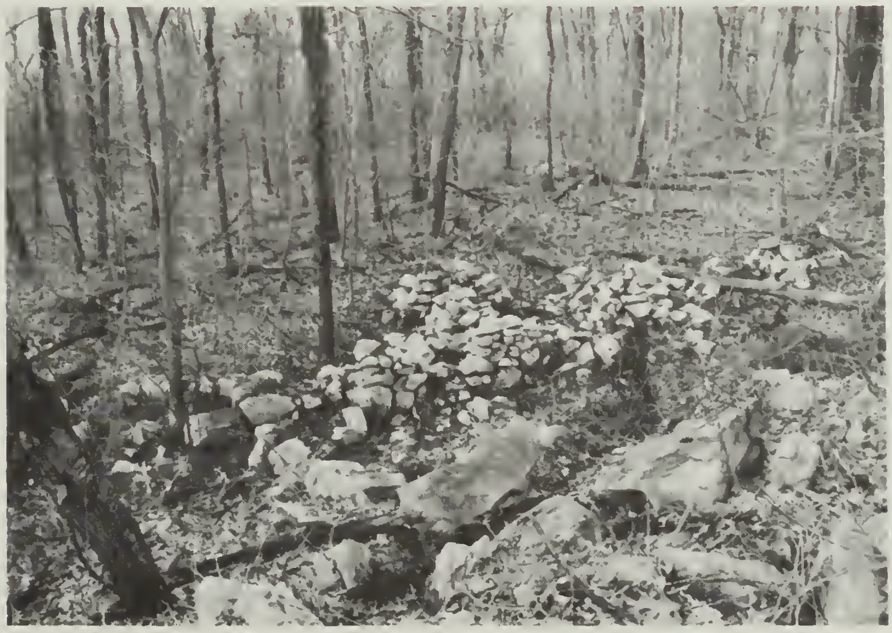


Figure 6.20 Campground Area 2. Feature CA2-F47, looking northwest. In the background, right of center, lies Feature CA2-F46.

Halfway between the massive stone structure of Feature CA2-F47 and the linear rubble-and-earth alignments of Feature CA2-F42 lies a rectangular stone pile (Feature CA2-F46) about 2 to 2.5 ft high. Along its south and east sides, the stone presents a relatively finished, tiered appearance. The other two sides consist of mounded rubble. This feature may represent a smaller, but somewhat better-preserved version of Feature CA2-F37, the stone pile located at the north end of this middle group of features.

Anchoring the south end of this group of recorded features is a rubble wall (Feature CA2-F45) which extends across most of the plateau. The wall begins near the west edge of the plateau, about 110 ft from the south terminus of Feature CA2-F2 (the rubble wall extending along the west side of the terrace). The section of Feature CA2-F45 that crosses the relatively level plateau consists of irregularly-stacked stone. At the base of the slope to the crest, this feature becomes a well-defined, dry-laid stone wall standing about three feet high and spanning three feet in width. The wall continues to the east edge of the crest before turning sharply northward, where it becomes part of Feature CA4-F9 in Campground Area 4.

At the extreme west end of Feature CA2-F45 is a rectangular depression (Feature CA2-F44) measuring 13 x 8 ft and adjoining the north side of that wall. A substantial amount of stone rubble lines the west edge of this feature. Also in this vicinity, between the west end of Feature CA2-F45 and the south end of Feature CA2-F2, stands a three-sided rubble wall (Feature CA2-F43) that fills the west half of the gap between Features CA2-F2 and CA2-F45.

The ground surface around the middle group of features is almost devoid of stone. The slope leading to the summit, on the other hand, is covered with loose stone, suggesting the plateau was cleared and the unused stone thrown on the slope. Along this plateau, around the substantial, recorded features, appear a number of very ephemeral ground anomalies that unfortunately proved too faint to map.

South of Feature CA2-F45 extends a level, stone-free area 250 ft in length which separates the second group of features from the third, southernmost cluster. This tract also contains a number of ephemeral ground anomalies. Against the base of the slope to the crest lies the only feature (CA2-F48) recorded in this part of Campground Area 2. It consists of a rectangular, dry-laid stone foundation with interior dimensions of 8 x 6 ft and which opens toward the east, or uphill.

South Group of Features. The third group of features consists primarily of rounded stone piles in an area that otherwise contains little surface stone. These mounded piles vary from 3 to 12 ft in diameter, although most range from six to eight feet across. They stand no higher than two feet.

The eight stone piles in the north half of this group (Features CA2-F49 to CA2-F52 and CA2-F55 to CA2-F58) appear randomly placed in no apparent pattern. On the northwestern edge of this group lie two shallow, rectangular depressions (Features CA2-F53 and CA2-F54) that roughly parallel Road U.

The south half of this cluster divides into two rows. The rows parallel each other at a distance of 25 ft and extend for 50 to 60 ft in an east-west direction across the terrace. The north row consists of four features that differ somewhat in configuration. The westernmost (Feature CA2-F59) is a stone pile seven feet in diameter. On its east side lies Feature CA2-F60, an amorphously-shaped stone scatter with no apparent structural integrity. Two dry-laid stone foundations complete the first row. The first (Feature CA2-F61) is rather small, with interior dimensions of 6 x 4 ft and open to the south. The other foundation (Feature CA2-F62) is heavily disturbed and presently measures only 6 x 2.5 ft along its interior edges. It opens to the north.

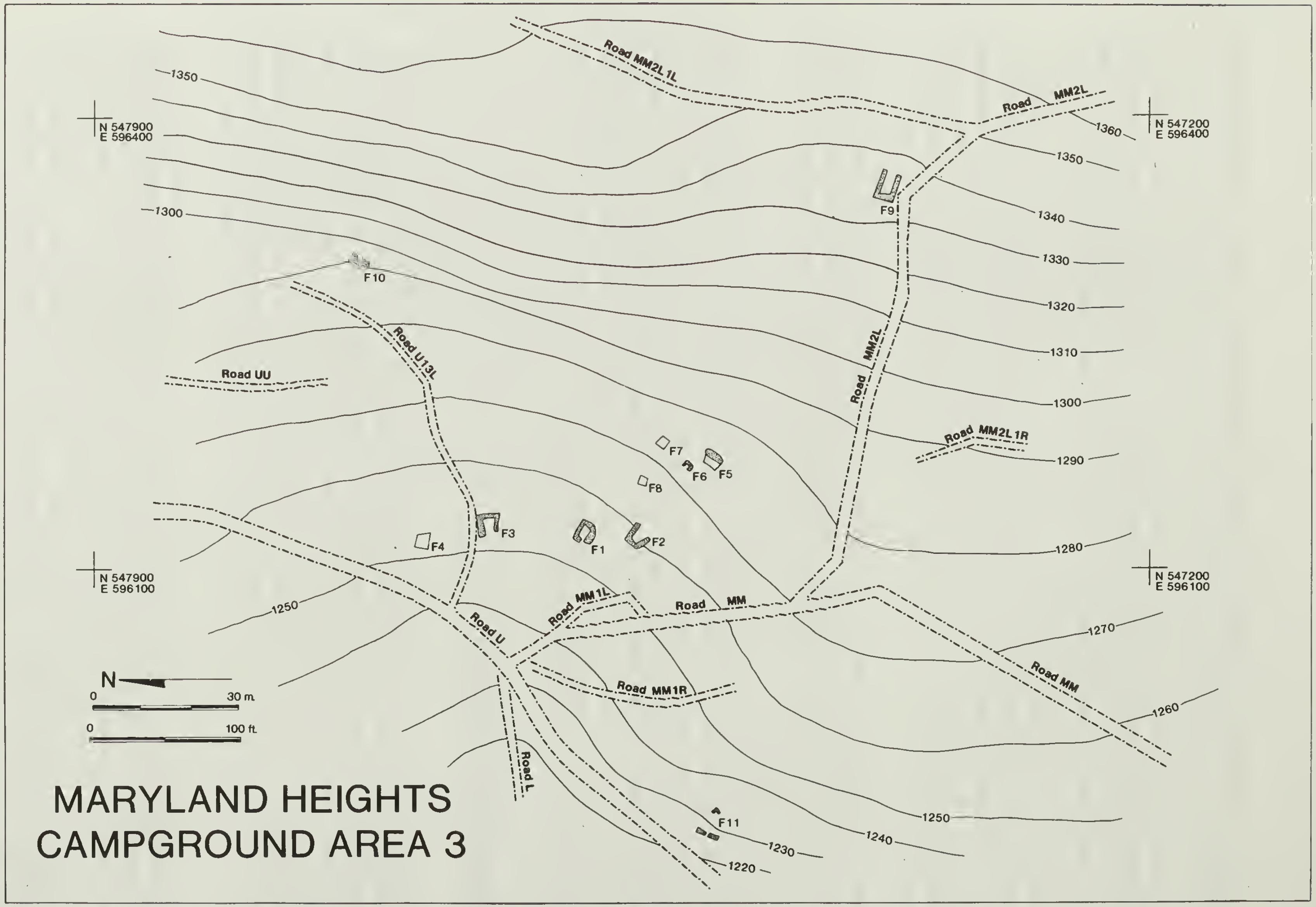
Seven additional stone piles (Features CA2-F63 to CA2-F69) comprise the south row. Of these, the two on the west end each have a side with a finished edge. A short distance southwest of this row lies a shallow, rectangular depression (Feature CA2-F70) that measures 9 x 6 ft.

Campground Area 2 appears to have continued about 500 ft south of this cluster of stone piles. This section, along with the area stretching from the stone piles to the base of the slope, is basically free of stone. Throughout this relatively flat area appear faintly perceptible ground anomalies. No stone features were recorded here, although two fairly substantial depressions (Features CA2-F71 and CA2-F72) were mapped along the edge of Road U. Toward the south end of the campground area, the ground surface becomes increasingly rocky and steep.

Campground Area 3 (18WA397)

Campground Area 3 is situated below and west of the 100-pounder Battery, at the intersection of two primary roads--Road U, the main fire road, and Road MM, which extends from the fire road up to the battery (Figure 5.13). This campground area lies at the extreme south end of the same plateau which Campground Area 2 sits upon, but approximately 500 ft of extremely rocky ground separate the two. Campground Area 3 also lies a short distance below Campground Area 6, a small site on the crest just north of the 100-pounder Battery. An abrupt, steep cliff divides these two campground areas.

Campground Area 3 encompasses about 2.5 acres, although its somewhat vague boundaries are difficult to define. Most of the recorded features lie along the narrow, gradually sloping plateau or against the base of the precipitous slope leading to Campground Area 6 (Figure 6.21). Road U forms the clearest boundary as it ascends along the west edge of the plateau. The site does not appear to continue west of this road. With the exception of one feature (CA3-F9) along Road MM2L, a steep incline toward the summit bounds the campground area on its east side.


MARYLAND HEIGHTS
CAMPGROUND AREA 3
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0
30 m
0
100 ft
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E 596400
N 547200
E 596400
N 547900
E 596100
N 547200
E 596100
Road MM2L 1L
Road MM2L
Road MM2L 1R
Road U13L
Road UU
Road U
Road MM 1L
Road MM
Road MM1R
Road L
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1220

Figure 6.21

The lack of either natural or artificial boundaries hampers definition of the northern and southern boundaries. On the south end, the main group of features is bordered by Road MM2L, which extends up to the 100-pounder Battery. Ephemeral ground anomalies suggest, however, that the campground area extended beyond that road, and thus it probably cannot be considered a true boundary. Narrow and rocky Road U13L basically defines the north edge of Campground Area 3, although one feature (CA3-F4) was recorded north of that road. The area outlined within these parameters is extremely rocky, particularly along the base of the slope.

Three dry-laid stone foundations (Features CA3-F1 to CA3-F3) aligned in a north-south direction dominate the center of the site. These features are not spaced equidistantly from each other--a distance of 20 ft separates Features CA3-F2 and CA3-F1, and Features CA3-F1 and CA3-F3 stand 50 ft apart. The three foundations measure roughly the same size, as two have interior dimensions of 9 x 7 ft and one 10 x 6 ft. Both of the features measuring 9 x 7 ft open toward the west, while the third opens toward the southeast. All three lie in an extremely rocky area. No apparent paths lead to them with the exception of Road U13L, which brushes the north side of Feature CA3-F3. No evidence of additional features appear in the immediate vicinity.

One platform (Feature CA3-F4) was recorded in the center of the plateau. This ten-foot square leveled and stone-free area sits about 30 ft north of Road U13L and a short distance above Road U.

On the east side of Campground Area 3, against the base of the steep slope, exists a small cluster of features. Within this group are two small, leveled platforms (Features CA3-F7 and CA3-F8). The first lies at the base of the slope, while the other sits on the incline just above. These platforms measure almost the same size--6 x 6 ft and 6 x 5 ft. Additional leveled platforms may be situated along the slope a short distance north of these two, but they were too ephemeral to be defined clearly.

In this same group are two dry-laid stone features in proximity to each other. The smaller of the two, Feature CA3-F6, consists of a foundation with a diminutive interior measuring 2.5 ft square. This three-sided feature is built against the flat, south face of a large bedrock outcropping. The walls stand 1.5 ft high; their exterior sides are slightly battered and relatively well built.

Nearby stands a second, larger foundation (Feature CA3-F5) constructed against the slope (Figure 6.22). The primary component of this feature is a stone wall ten feet in length with a crude west face and mounded rubble on its east side. Along the west center base of the wall, an apparent lintel stone tops an opening about two feet wide. On the west side of the stone wall is a 10 x 6 ft leveled platform defined by stone around its edges.

Adjacent to the north edge of Road MM2L, well above the other features, lies Feature CA3-F9, an isolated, dry-laid stone foundation. Road MM2L1L, a primary road running north along a narrow shelf to Campground Area 6,

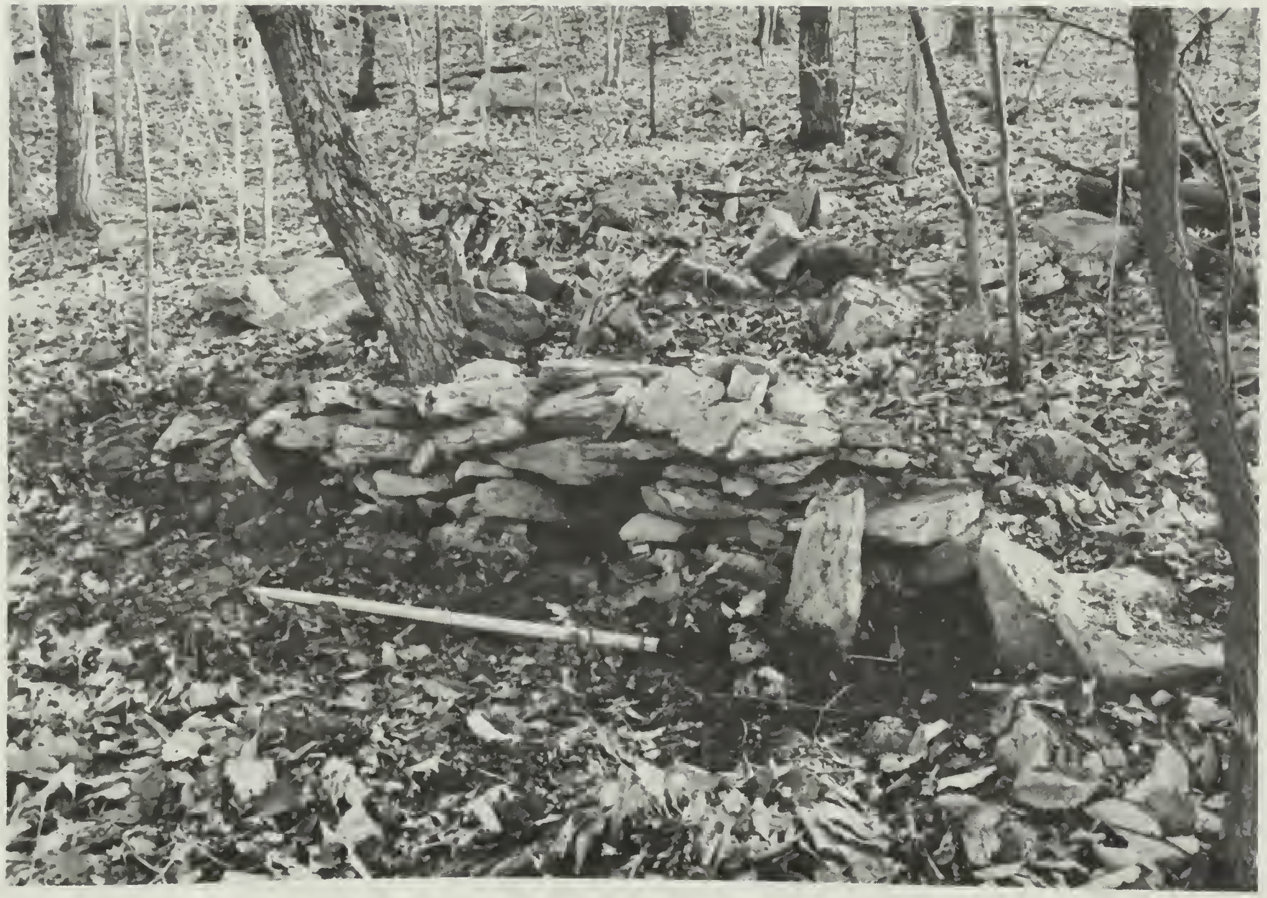


Figure 6.22 Campground Area 3. Feature CA3-F5, looking east.
Note opening in center base of feature.

begins a short distance above this feature. The foundation is three sided, with interior dimensions of 15 x 7 ft, and it opens to the east. On the east end of the feature is a cleared, relatively level area that extends past the stone walls for about five feet.

Although Feature CA3-F9 was recorded as part of Campground Area 3, it is difficult to determine whether it is associated with that site, Campground Area 6, or the 100-Pounder Battery. Just north of that stone foundation, along a narrow terrace leading to Campground Area 6, lie the faint traces of ephemeral, leveled platforms. Interestingly, this area is almost devoid of surface stone.

The northernmost feature in Campground Area 3 is an isolated, dry-laid stone foundation (Feature CA3-F10) that sits above Road U13L near the point where that road fades out. This three-sided foundation nestles against the base of the steep slope. Although its walls are thickly constructed of battered rubble several feet wide, the interior is small (4.5 x 4 ft), more closely resembling a shallow depression than a leveled surface. The ground surrounding the feature is extremely rocky.

On the south end of this campground area lies another relatively isolated feature (CA3-F11), the only one recorded south of Road MM. This feature sits just above Road U and consists primarily of a dry-laid stone alignment 17 ft in length and 2.5 ft wide. In the center of this wall appears a three-foot wide gap or entryway. No evidence was found, however, of a leveled platform on either side of the wall.

A semicircular stone stack mapped as part of Feature CA3-F11 perches about 15 ft uphill from this stone wall. This loosely-stacked pile does not share the same alignment as the stone wall. This fact, combined with its loose construction, suggests it has been extensively disturbed or dates from modern times.

Campground Area 4 (18WA398)

The main part of Campground Area 4 lies along a narrow plateau adjoining the south side of the Interior Fort (Figure 5.13). This terrace measures about 200 ft wide adjacent to the fortification. Toward the south it gradually contracts in size and drops in elevation; about 300 ft from the Interior Fort it constricts into a narrow, spiny ridge top characteristic of much of the crest on Maryland Heights. On the east side of the narrow summit a short, shallow ravine extends down to Road H. Several features associated with this site lie along the west flank of this ravine, as well as on the narrow ridge top.

The boundaries of Campground Area 4 are well-defined. To the north, the south breastwork of the Interior Fort borders the site. On its west side, Road JJ initially delineates the west boundary of the campground area (Figure 6.23). This road extends south from the Interior Fort for 170 ft before fading out for a short distance and then re-emerging in the center of the south half of the site. Two features--Feature CA4-F3, a linear rubble concentration 125 ft in length, and Feature CA4-F8, a 170-ft long stone wall--essentially form the remainder of the west boundary.

Along the north half of the campground area, the rocky crest which extends south from the Stone Fort defines the eastern limits. A short, steep incline leads from the main terrace to the summit in this area. For the remainder of its length, the east boundary is more indefinite. Feature CA2-F45, a rubble wall that originates in Campground Area 2 and extends across the top of the crest, forms the southern extent of Campground Area 4.

Two primary roads extend through the site. The previously mentioned Road JJ enters the northwest corner of the site after passing between the Interior and Exterior Forts. From that point it travels along the west edge of the terrace and then onto the center of the narrow summit comprising the south half of Campground Area 4. The road turns abruptly to the west at a small saddle in the crest near the south end of the site, and then passes into Campground Area 2.

Road H6L extends straight up the middle of the ravine on the east side of the crest. It originates at Road H, the main road on the east flank of the mountain, and travels to the south edge of the terrace before fading out. Along the west edge of Road H6L, near the top of the ravine, is Charcoal Hearth 37. No connection between Roads JJ and H6L could be discerned.

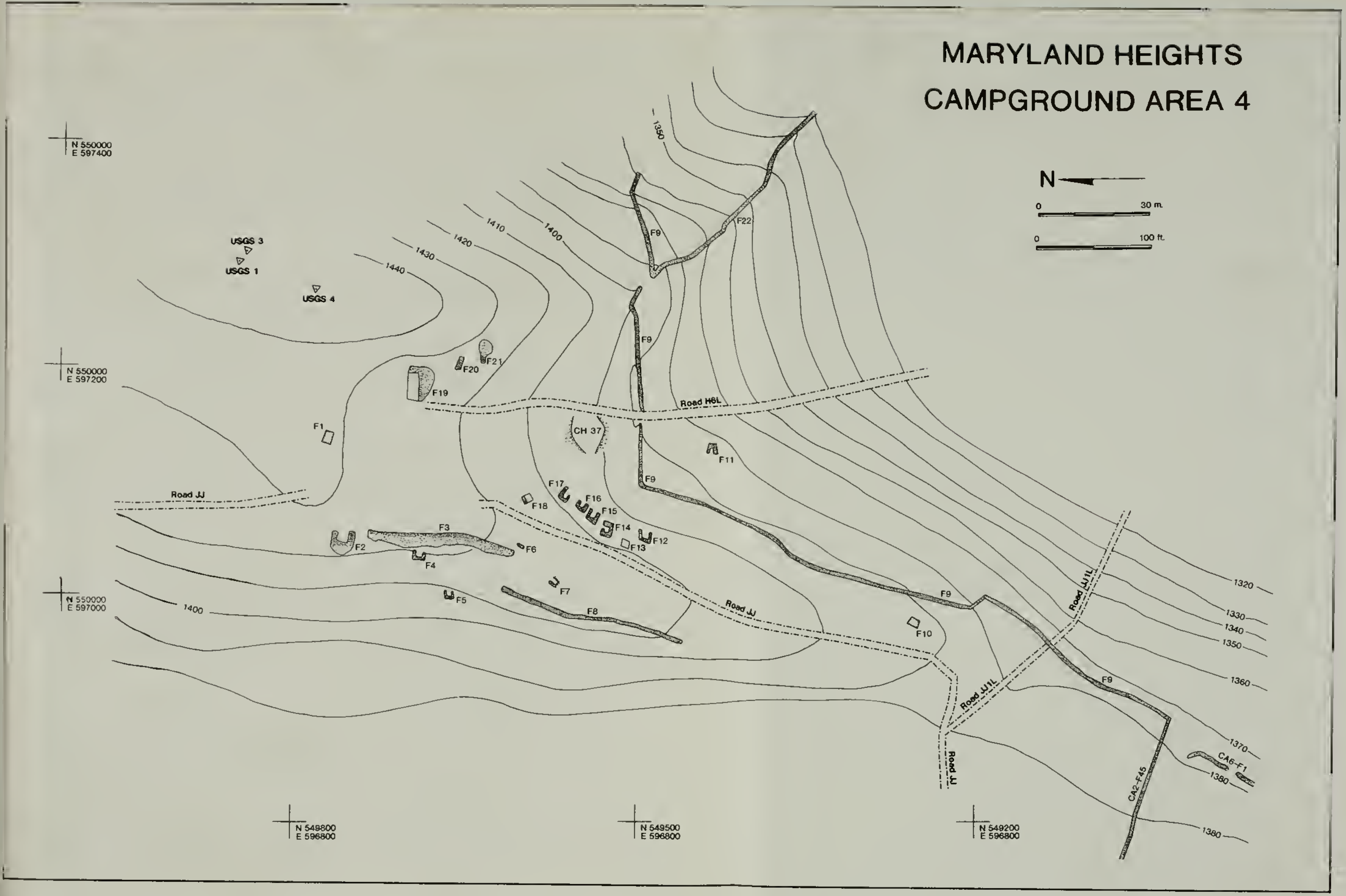
The plateau immediately south of the Interior Fort is level and devoid of surface stone. Many faint ground anomalies are perceptible in this area, although only one rectangular depression (Feature CA4-F1) was defined sufficiently to map. This depression measures 12 x 8 ft and is slightly more than one foot deep.

Along the southern edge of the plateau, at the point where it begins sloping down into the ravine, sit three stone features. These features lie along the base of the narrow, spiny crest defining the east boundary of Campground Area 4 in this area. The largest of the three--an L-shaped, built-up rubble alignment (Feature CA4-F19)--supports a large, leveled platform on its north side with dimensions of 20 x 12 ft. The rubble along the platform edge presents a uniform and fairly finished appearance, whereas the exterior side of the alignment is irregular and scattered. Road H6L fades out beside this feature.

A short distance southeast of Feature CA4-F19 lies Feature CA4-F20, a dry-laid stone wall 12 ft long and four feet wide. The south face presents a roughly finished appearance and stands 1.5 ft high, while the irregular north face projects only slightly above the ground surface. The ground surface on the north side of the feature appears to have been leveled, suggesting that Feature CA4-F21 functioned as a retaining wall.

Constructed against the base of the short, rocky ascent to the crest lies the third feature (CA4-F21), composed primarily of an amorphously-shaped stone heap that holds little definition. Projecting from the west end of

N 550
E 597
N 550
E 5972
N 550
E 597


MARYLAND HEIGHTS
CAMPGROUND AREA 4
N
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30 m.
0
100 ft.
N 550000
E 597400
N 550000
E 597200
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E 597000
N 549800
E 596800
N 549500
E 596800
N 549200
E 596800
USGS 3
USGS 1
USGS 4
1350
1410
1400
1420
1430
1440
F9
F22
F20
F21
F19
Road H6L
CH 37
F1
F11
Road JJ
F17
F16
F15
F14
F18
F12
F13
F3
F2
F6
F4
F7
F5
F8
1400
Road JJ1L
F10
1320
1330
1340
1350
1360
1370
1380
1380
CA6-F1
CA2-F45
Road JJ

Figure 6.23

this stone heap, however, is a massive wall segment about six feet long, four feet wide, and two to three feet high. The east end of this wall segment disappears under the rubble.

Just below the east edge of the crest, between Road JJ and Charcoal Hearth 37, extends a line of four dry-laid stone foundations across the slope (Figure 6.24). The first of these foundations, Feature CA4-F14, has a relatively small interior (6 x 4 ft) and a narrow entryway on its north side. The remaining three foundations (Features CA4-F15 to CA4-F17) all open toward the southeast and vary little in size, from 7 x 5 ft to 8 x 5 ft.

On the south side of this group of stone foundations, in alignment with them, sits a six-foot square platform lined with scattered stone rubble (Feature CA4-F13). Slightly downslope lies Feature CA4-F12, another three-sided, dry-laid stone foundation, but open to the east.

Completing the group of features on the east side of Road JJ is Feature CA4-F18, a stone alignment situated a short distance north of the row of foundations. This alignment extends about eight feet and has a crude east face that stands about 1.5 ft high; on its east side appears an apparent platform measuring approximately 8 x 5 ft.

The section of Campground Area 4 directly uphill from Charcoal Hearth 37, between Roads JJ and H6L, contains approximately a dozen sizable, leveled and possibly aligned platforms. Unfortunately, a tangled thicket presently covers this area and obscures the configuration and extent of these platforms. Faint platforms also may exist between Charcoal Hearth 37 and the summit to the east.

As discussed above, two linear stone features define much of the west boundary of the site. Feature CA4-F3, a substantial rubble concentration, comprises the north half of this pair and extends approximately 125 ft along the west edge of the terrace. The east side of the rubble forms a definite linear alignment; a heavy concentration of stone extends six to eight feet behind, or west, of the alignment. The rubble continues an additional eight to ten feet downslope from this initial concentration, but in decreasing amounts until it blends into the stone covering the remainder of the slope.

Feature CA4-F2, a large, ten-foot square, three-sided rubble foundation open to the east, anchors the north end of Feature CA4-F3. The sides of the feature are composed of mounded rubble. Near the south end of Feature CA4-F3 lies Feature CA4-F6, a narrow, dry-laid stone alignment six feet in length.

Two three-sided, dry-laid stone foundations (Features CA4-F4 and CA4-F5) sit on the steep, rocky slope just below Feature CA4-F3. Both measure about 6 x 5 ft, are constructed on top of leveled platforms, and open to the east, or upslope. These features sit a short distance above the level plateau on which Campground Area 2 is located.

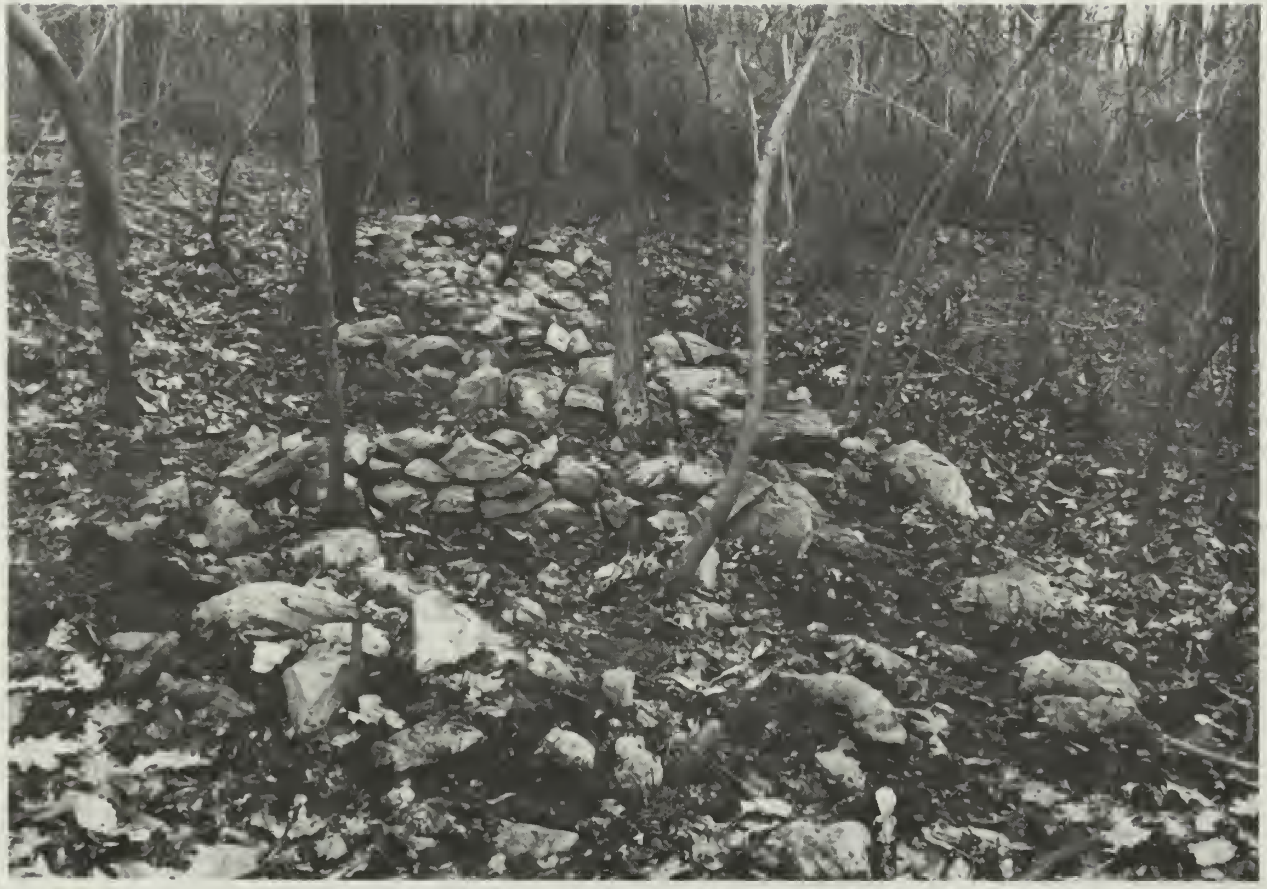


Figure 6.24 Campground Area 4. Overview of features CA4-F15 to CA4-F17, looking north-northeast. Feature CA4-F14 lies in the foreground

The second linear feature defining part of the west edge of Campground Area 4 is Feature CA4-F8, a dry-laid stone wall 170 ft in length. This wall begins about 30 ft downslope from the south end of Feature CA4-F3. Unlike the latter, Feature CA4-F8 is a well-constructed wall that originally was coursed and faced on both sides. The wall varies in width from five feet at its northern end to three feet near its southern extremity. At its highest point, the wall stands 2.5 ft; however, in most areas it has collapsed, particularly along its west face.

A short distance east of Feature CA4-F8 sits a three-sided, dry-laid stone foundation (Feature CA4-F7). This ill-defined feature measures 6 x 5 ft along its interior edges and opens toward the northeast. The surrounding ground surface along this section of the crest is virtually free of stone, with faint indications of leveled platforms.

Few features were apparent along the narrow ridge that constitutes the south half of the site. Only Feature CA4-F10, a rectangular depression measuring 10 x 8 ft and 1.5 ft deep, was mapped in this area; however, additional, but extremely ephemeral, ground anomalies were noted in the immediate locale.

Feature CA4-F9, a long, meandering rubble wall, encircles the top of the ravine, just below the east edge of the crest. At its south end, this wall forms a corner with Feature CA2-F45, the stone wall extending up to the crest from Campground Area 2. Feature CA4-F9 then travels in a northeasterly direction to a point below the row of stone foundations (Features CA4-F14 to CA4-F17), where it turns sharply eastward across the mouth of the ravine, just below Charcoal Hearth 37. The rubble wall crosses the south end of the narrow, rocky spine which defines the mountain crest to the north, and then ties into a large bedrock outcropping. On the other side of this outcropping, it continues for a short distance down a steep and rocky slope before ending.

The wall generally consists of stacked rubble which has collapsed in most areas. A crude east face remains along some sections, and a west face along others, suggesting the wall originally was finished on both sides. Adjoining the north side of Feature CA4-F9, as it curves around the ravine, is a possible shallow ditch. It appears that dirt excavated from this ditch may have been thrown against the north face of the wall. The possible ditch ends just before the wall ties into the bedrock outcropping.

A ten-foot wide entrance was constructed in Feature CA4-F9 directly below Charcoal Hearth 37. Road H6L passes through this gap. It is conceivable that the hearth was converted into a gun emplacement to defend this access up the east flank of Maryland Heights. Near the southern end of Feature CA4-F9, the wall was built over a narrow, secondary sled road (JJ1L) that crosses the small saddle in the crest and joins Road JJ.

Along the east edge of the ravine stands yet another rubble wall, Feature CA4-F22. This wall begins at the same bedrock outcropping Feature CA4-F9 abuts against, but runs downslope in a southeasterly direction to Road H. After crossing that road, the wall turns toward the northeast and extends for a short distance along the edge of a bedrock outcropping before fading out.

As with Feature CA4-F9, this wall is constructed of loosely-stacked fieldstones which form two crude wall faces. The width of the wall varies from two to four feet, but it tends to decrease with increasing distance downslope. At its highest point the feature stands 2.5 ft, although much of it has collapsed.

Campground Area 5 (18WA399)

Campground Area 5 is the only campground recorded on the east slope of Maryland Heights. It sits on a relatively broad terrace directly below the Stone Fort (Figure 5.13). In fact, the base of a very steep and rocky slope leading to the fort demarcates the west boundary of the campground area.

The collapsed remnants of Feature CA5-F1, a dry-laid stone wall about 270 ft in length and averaging three feet wide, define the south half of the east edge of the campground area (Figure 6.25). This wall begins at Road H and extends northward to a large bedrock outcropping. Feature CA5-F27, a second rubble wall, defines the remainder of the east boundary on the north side of the bedrock outcropping. It extends about 230 ft and also averages three feet in width. The south end of Feature CA5-F27 abuts against the bedrock, while the north end gradually fades out. This feature curves around the east base of Charcoal Hearth 8. At their greatest heights, both walls stand about two feet high.

The south end of Campground Area 5 is delimited by Feature CA5-F15, an amorphously-shaped depression, and the south edge of a terracing system constructed across much of the south end of the site. Beyond these points, the ground begins to slope steeply upward and becomes increasingly rocky. There is no visible evidence of features situated along this slope.

A line drawn westward from the bedrock outcropping anchoring the north end of Feature CA5-F1 arbitrarily defines the north boundary of the site. With the exception of the rubble wall of Feature CA5-F27 and Charcoal Hearth 8, no features were apparent north of this line. In addition, the ground surface north of this point becomes rockier and begins to drop more steeply toward the northeast. Within the confines described above, the site encompasses approximately three acres.

A relatively level plain characterizes the east half of Campground Area 5. Most of the recorded features lie within this area. The predominant feature in this group (CA5-F10) is situated near the east center. It consists of a heavily disturbed, dry-laid stone foundation standing about two feet high (Figure 6.26). The foundation presently is five-sided (as the north side has been pushed outwards) and it has interior measurements of 12 x 10 ft along its south and east sides. The interior ground surface is very uneven and appears to have been dug extensively.

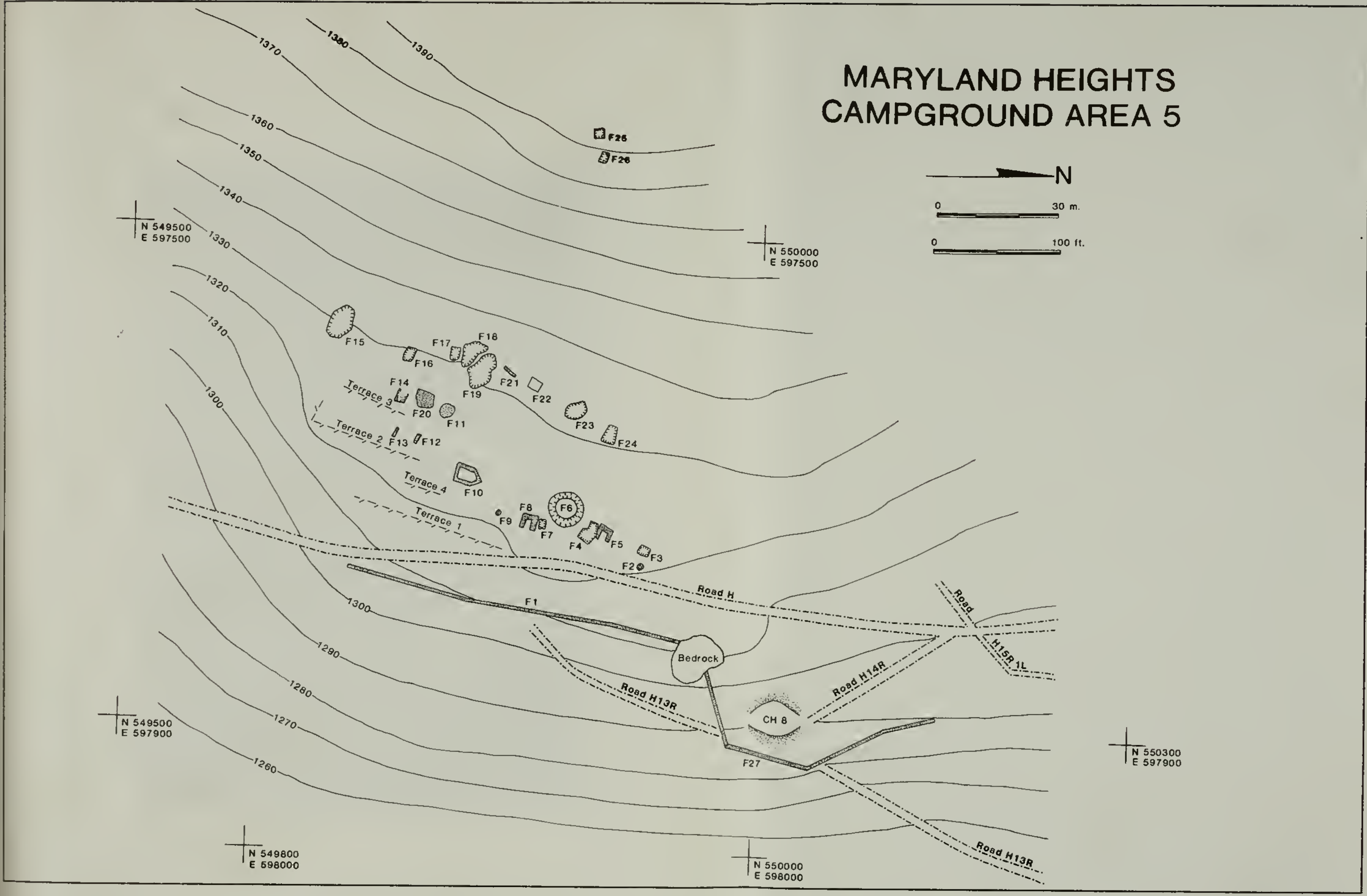

MARYLAND HEIGHTS
CAMPGROUND AREA 5
N
0
30 m.
0
100 ft.
1370
1380
1380
1360
1350
1340
1330
1320
1310
1300
1300
1290
1280
1270
1260
N 549500
E 597500
N 550000
E 597500
N 549500
E 597900
N 549800
E 598000
N 550000
E 598000
N 550300
E 597900
F25
F26
F15
F16
F17
F18
F19
F21
F22
F23
F24
F14
F20
F11
F13
F12
F10
F6
F8
F9
F7
F4
F5
F3
F2
F1
F27
Terrace 3
Terrace 2
Terrace 4
Terrace 1
Bedrock
CH 8
Road H
Road H13R
Road H14R
Road H15R 1L
Road H13R

Figure 6.25

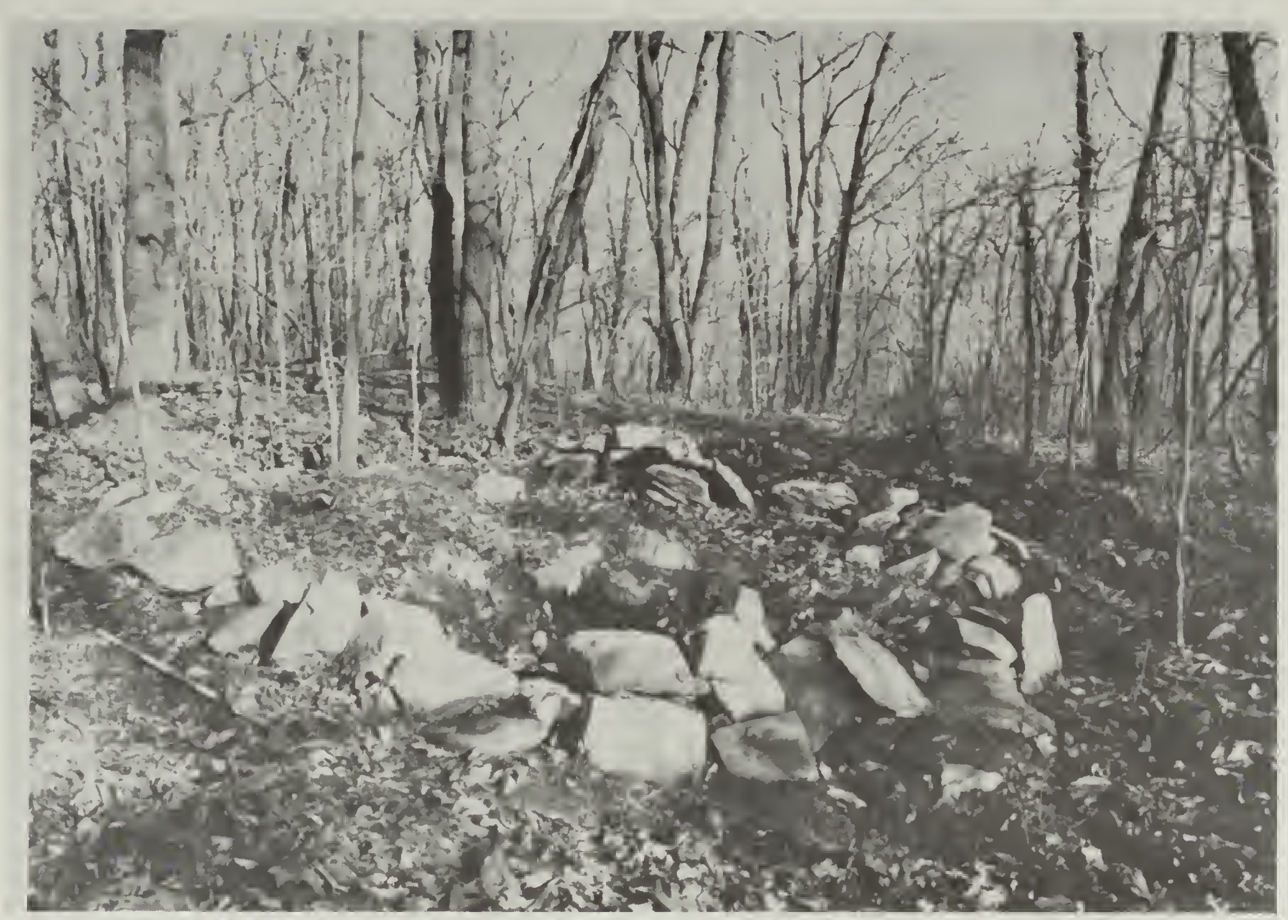


Figure 6.26 Campground Area 5. Feature CA5-F10, looking northeast.

This stone foundation anchors the south end of a roughly-aligned group of features which extends in a northeast-southwest direction above Road H. Within this alignment are a variety of different feature types. In the center, set back from the other features, sits Feature CA5-F6, a circular platform 17 ft in diameter which rises slightly above the surrounding ground surface. A shallow ditch about five feet wide and one-foot deep encircles the perimeter of the platform.

Two three-sided, dry-laid stone foundations, both open toward the east and with interior dimensions of 8 x 6 ft, flank the circular platform on its northeast and southeast sides. Feature CA5-F5, the foundation on the northeast side of the platform, is the better preserved of the two. Adjoining this feature on its south side is a fairly large, amorphously-shaped depression (Feature CA5-F4) that measures roughly 15 x 10 ft along its longest axes and ranges from 1.3 to 2 ft in depth.

The foundation on the southeast side of the circular platform, Feature CA5-F8, is more ephemeral and defined by mounded rubble which rises only slightly above the surrounding ground surface. A rectangular depression (Feature CA5-F7) cut into the slope and measuring 8 x 6 ft adjoins the north side of this second foundation.

At the north edge of this alignment of features lie two depressions. The larger of the two, Feature CA5-F3, measures 8 x 6 ft and extends a shallow one-foot in depth. Seven feet east of this feature lies a small, circular depression (Feature CA5-F2) four feet in diameter and 1.5 ft deep. At the south end of the alignment sits Feature CA5-F9, another circular depression that also measures four feet across, but is slightly shallower.

Along the south end of Campground Area 5, above Road H, extend the eroded remnants of four narrow, artificially built-up and leveled terraces. With the exception of the one located directly above the road (Terrace 1), these terraces do not extend north of Feature CA5-F10, the stone foundation in the center of the site.

Two dry-laid stone alignments, Features CA5-F12 and CA5-F13, sit on Terrace 2. These alignments are spaced 15 ft apart, and each measures eight feet in length. Above the two alignments, along Terrace 3, lie three stone concentrations--Features CA5-F11, CA5-F14, and CA5-F20--that range from 9 to 13 ft in diameter.

At the west edge of the natural terrace on which the campground area sits, located against the base of the steep slope leading up to the Stone Fort, extend a line of large, irregularly-shaped depressions. These depressions are constructed into the slope, and thus lie deeper along their west ends. The largest, Feature CA5-F19, sits in the center of this group and measures approximately 30 x 15 ft. The west end of this feature extends about 4.5 ft deep, while the east end lies a shallow half foot below the surrounding grade.

A short distance north of this large depression sit Feature CA5-F21, a dry-laid stone alignment about ten feet in length and 1.5 ft wide, and

Feature CA5-F22, a rectangular platform measuring 10 x 8 ft. Two additional depressions--Features CA5-F17 and CA5-F18--adjoin the south side of Feature CA5-F19. Both cut into the base of the slope.

Feature CA5-F15, a depression measuring roughly 24 x 18 ft and two feet deep along its west end, anchors the south end of this alignment of depressions. This feature also aligns with the south edge of the terracing system, and marks the south end of Campground Area 5. Between Feature CA5-F15 and the middle group of depressions lies a rather isolated, rectangular depression (Feature CA5-F16) with dimensions of 13 x 7 ft.

Two additional depressions comprise the north end of the alignment. Feature CA5-F23 is about 18 x 12 ft in size along its greatest axes, and 4.25 ft deep on its west end. About 20 ft farther north, ill-defined Feature CA5-F24 measures approximately 12 x 8 ft. Small bedrock outcroppings border the edges of this feature.

Two isolated features--CA5-F25 and CA5-F26--sit on a narrow ledge directly below the Stone Fort and well above the rest of Campground Area 5. These features consist of two shallow depressions, the first 8 x 6 ft in size, and the second 12 x 6 ft. It remains unknown whether the depressions are associated with the campground area or with the Stone Fort.

Campground Area 6 (18WA400)

Campground Area 6 spreads across a narrow, level plateau on the summit, about 100 ft north of the 100-pounder Battery (Figure 5.13). Steep, rocky slopes delineate both the east and west boundaries of the site. On the west side, the slope extends down to the terrace on which Campground Areas 2 and 3 sit. Feature CA6-F3, a poorly-preserved rubble alignment, also defines part of the east side of Campground Area 6. This alignment extends 260 ft along the east edge of the crest (Figure 6.27). At its north end, the feature turns sharply uphill and ties into a large, bedrock outcropping.

The bedrock outcropping forms the northeast corner of the plateau and part of the north boundary of the campground area. This outcropping towers over a ravine which extends down the east side of the mountain a short distance north of the site. The remainder of the northern limit follows the north edge of the plateau. Beyond this point, the crest dips and constricts into a narrow, rocky ledge. Feature CA6-F1, a long, meandering, dry-laid stone wall, extends along the east edge of this confined ridgetop for a distance of roughly 820 ft (Feature 5.13). This wall begins just outside the north boundary of Campground Area 5, and ends near the southern limits of Campground Area 4.

The southern edge of Campground Area 6 lacks a natural boundary. It is defined rather arbitrarily as the point where the crest begins to drop noticeably toward the south, and the ground surface becomes rockier. Within the given boundaries, the campground area occupies approximately 1.7 acres.

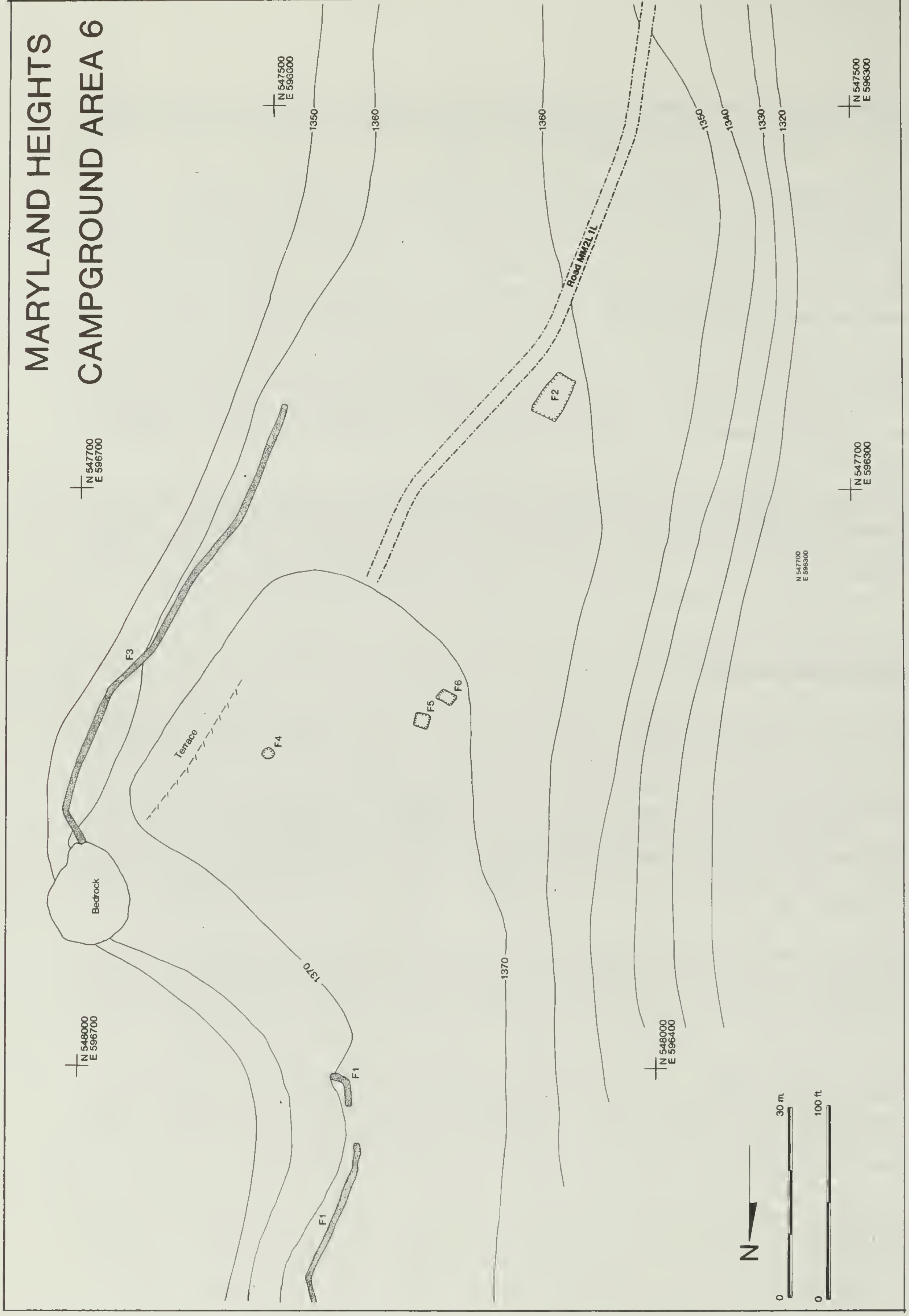

MARYLAND HEIGHTS
CAMPGROUND AREA 6
N 547500 E 596900
N 547700 E 596700
N 548000 E 596700
N 547500 E 596300
N 547700 E 596300
N 547700 E 596300
N 548000 E 596400
1350
1360
1360
1370
1370
1350
1340
1330
1320
Road MM2L 1L
F1
F1
F2
F3
F4
F5
F6
Terrace
Bedrock
N
0
30 m
0
100 ft

Figure 6.27

The main plateau area is devoid of surface stone. Although few features are readily apparent, slight undulations and ground anomalies suggest this area was occupied extensively. The only recorded features are four shallow depressions. The largest of these, Feature CA6-F2, measures 25 x 12 ft and lies near the south end of the campground area along Road MM2L1L. This primary road trace originates between Campground Area 3 and the 100-pounder Battery, and fades out on the plateau in Campground Area 6.

In the center of the campground area are two rectangular depressions--Features CA6-F5 and CA6-F6--with comparable dimensions of 8 x 7 ft and 9 x 6 ft, respectively. About 75 ft east of this pair of features lies Feature CA6-F4, a rounded depression about six feet in diameter and 1.5 ft deep.

Campground Area 7 (18WA401)

Campground Area 7 borders the south side of the 100-pounder Battery and occupies the remainder of the narrow summit plateau on which the battery is located (Figure 5.13). Any dividing line between the campground area and the defensive position is arbitrary, and most likely the two originally overlapped. Along the east and west edges of Campground Area 7, the ground drops precipitously. At its south end, the constriction of the plateau into the rocky, narrow spine which comprises much of the crest on Maryland Heights defines that boundary.

The campground area has been cleared of all surface stone. Few definable features were apparent, but ephemeral, unrecorded ground anomalies suggest that most, if not all, of the south half of the plateau was occupied.

Possibly marking the north boundary of Campground Area 7 are two shallow depressions separated by a distance of five feet (Figure 6.28). The larger of the two, Feature CA7-F3, measures 10 x 6 ft; the second, Feature CA7-F2, which has been disturbed by a hiking trail, is 7 x 6 ft in size. These depressions lie 10 to 15 ft east of a gun platform mapped as part of the 100-pounder Battery.

On the south edge of the site are two additional depressions--Features CA7-F5 and CA7-F6--that basically mirror the pair to the north in orientation and size. These two features sit seven feet apart from each other.

Feature CA7-F4, the predominant feature in Campground Area 7, forms a mounded, irregularly-shaped stone foundation measuring roughly 18 x 15 ft (Figure 6.29). In the interior of the mound is a small, cleared area with very little stone. The most substantial part of the feature consists of a mounded stone pile about three feet high located on the east side of the small cleared area. Along the east side of this mound lies a possible stone face extending north-south, but it is obscured by the rubble. Along the west edge of the this rubble is a very rough wall face, about four feet from the east edge.

The final feature recorded as part of Campground Area 7 is a poorly-preserved, dry-laid stone retaining wall (Feature CA7-F1) situated along the east edge of the summit. This wall stretches 25 ft and stands two feet high along its east face. This feature may not be part of Campground Area 7, but the 100-pounder Battery instead.

Campground Area 8 (18WA402)

Campground Area 8 occupies an open, level plateau on the north side of the Mortar Battery (Figure 5.13). This plateau encompasses approximately 1.2 acres and is cleared of all surface stone. Although no features were recorded in this campground area, ephemeral ground anomalies, too indefinite to map, were noted. A road trace, Road RR, extends from the south end of Campground Area 7 into the north half of this site, where it fades out.

Campground Area 9 (18WA403)

Campground Area 9 occupies the south end of a gradually sloping plateau on the north side of the 30-pounder Battery (Figure 5.13). For the purposes of this report, the south boundary of the site is defined by a terrace (Terrace 1) that extends somewhat obliquely across slope for about 170 ft (Figure 6.30). This terrace separates the campground area from the fortification proper. A steep and rocky drop-off delineates the west boundary, while the east side is bounded by a steep, short slope leading up to a narrow, spiny crest that ends at the east flank of the 30-pounder Battery. Only the end of recorded features and an increase in the rockiness of the ground surface define the northern extent of the campground.

Two primary road traces enter the campground area from the north. The first, Road MM, begins at Road U, travels upslope through Campground Area 3, and then turns sharply south. It extends along the west edge of the plateau on which Campground Area 9 sits, and fades out in the center of that site. Road PP begins at the west edge of the Mortar Battery, drops down an extremely steep, but short slope, then turns southward, extending into the center of Campground Area 9 before fading out. Roads MM and PP probably merged at one time.

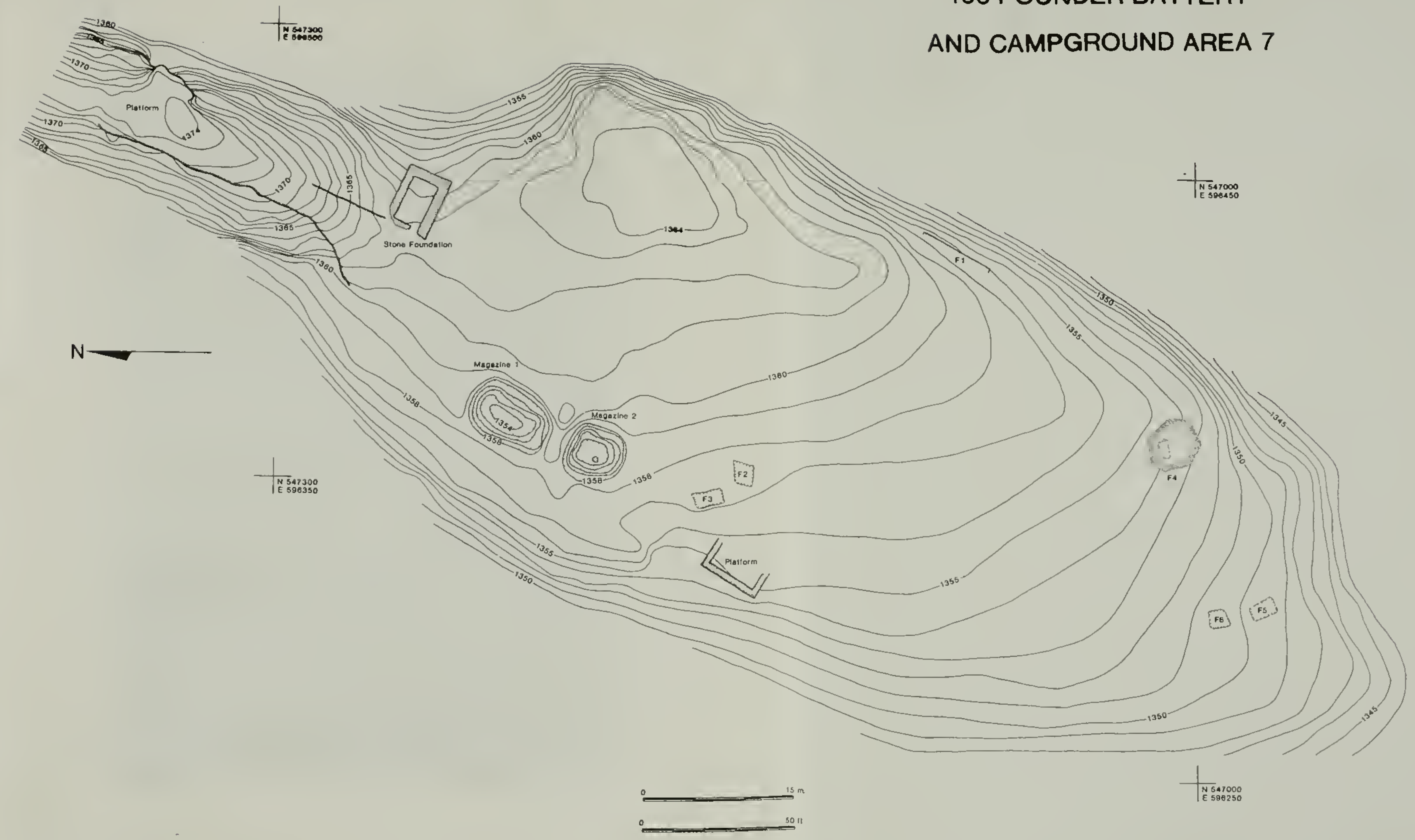
Campground Area 9 is comprised of scattered, relatively isolated features, particularly along its north half. The most striking of these is Feature CA9-F8, an exceptionally well-preserved stone foundation on the west edge of the plateau. This foundation appears to be constructed into the east side of a charcoal hearth; the level ground surface to the west and south of this feature has the characteristic shape and black soil of a hearth. The well-defined interior faces of all four walls are constructed of dry-laid, medium-sized fieldstone with some small chinking stones (Figures 6.31 and 6.32). The walls are a uniform 2.5 ft in width and stand a minimum of 2.5 ft high, enclosing an area that measures 9.7 x 7 ft (Figure 6.33).

1370
1365

MARYLAND HEIGHTS

100 POUNDER BATTERY

AND CAMPGROUND AREA 7


N 547300
E 596500
1380
1370
1365
Platform
1374
1370
1365
1360
Stone Foundation
1365
1360
1364
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E 596450
F1
1350
1355
N
Magazine 1
1360
1358
1354
1358
Magazine 2
1358
1358
F2
F3
1345
1350
F4
N 547300
E 596350
1355
1350
Platform
1355
F6
F5
1350
1345
0
15 m
0
50 ft
N 547000
E 596250

Figure 6.28

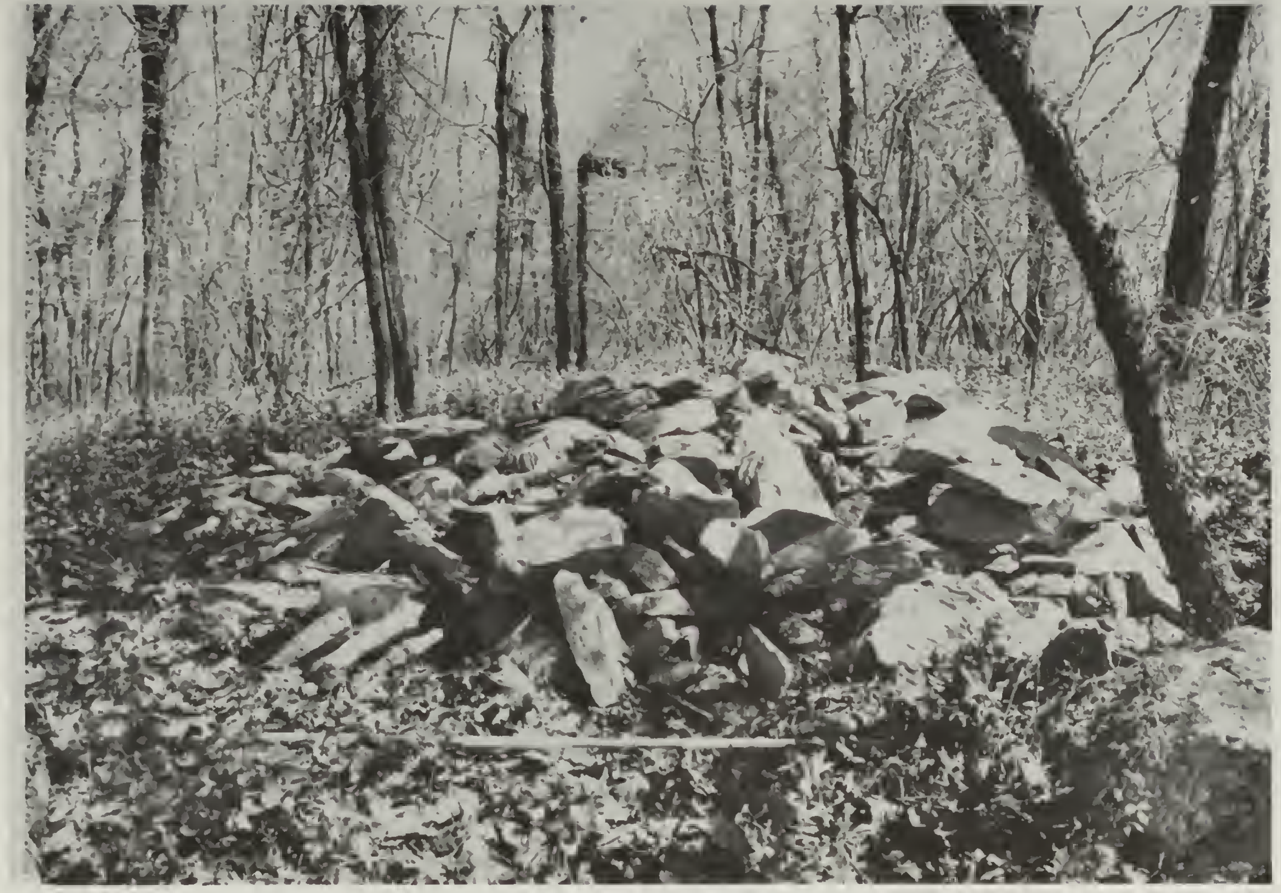


Figure 6.29 Campground Area 7. Feature CA7-F4, looking north.

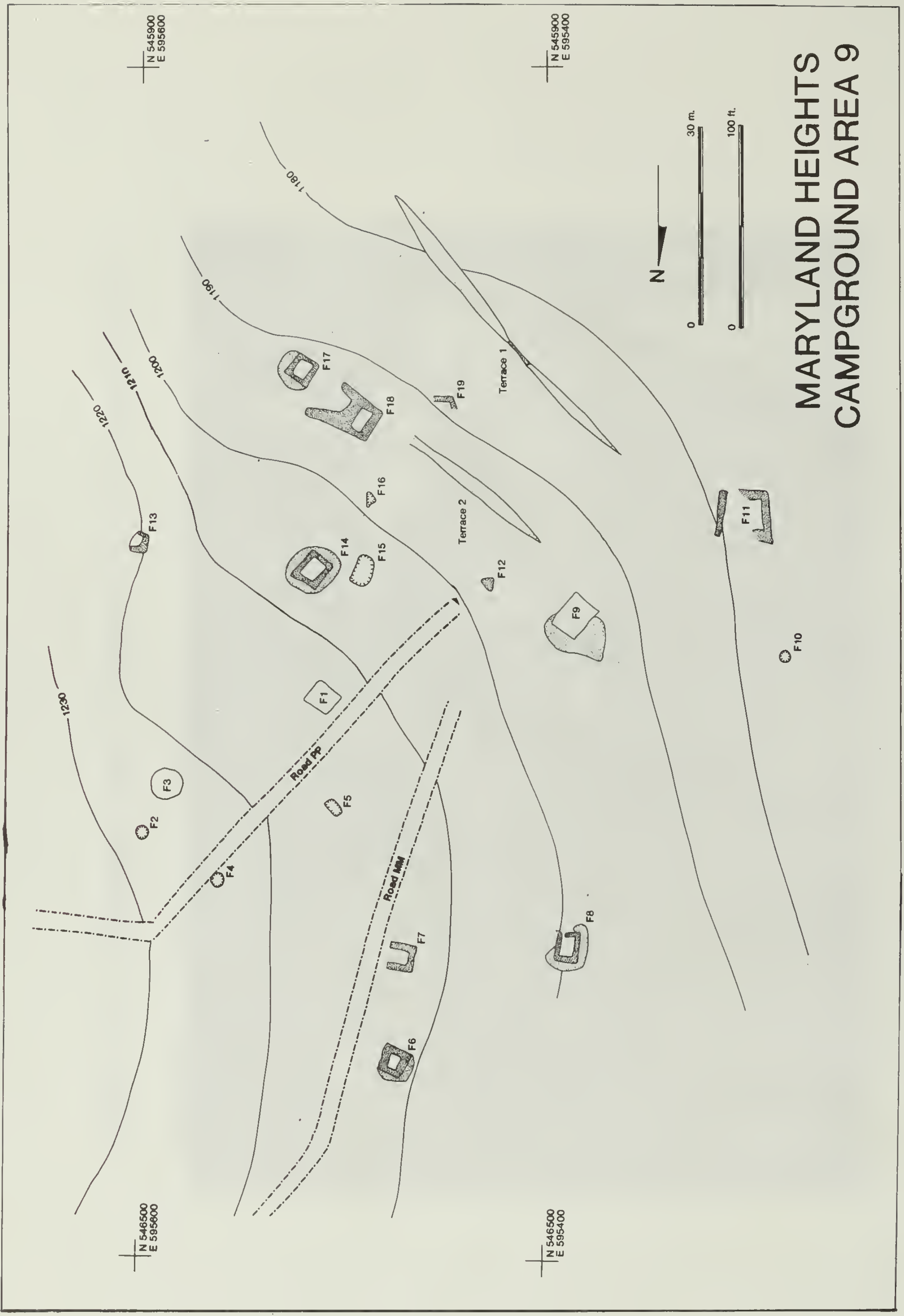

MARYLAND HEIGHTS
CAMPGROUND AREA 9
N
0
30 m.
0
100 ft.
N 545900
E 595600
N 545900
E 595400
N 546500
E 595600
N 546500
E 595400
1180
1190
1200
1210
1220
1230
Terrace 1
Terrace 2
Road PP
Road MM
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
F13
F14
F15
F16
F17
F18
F19

Figure 6.30

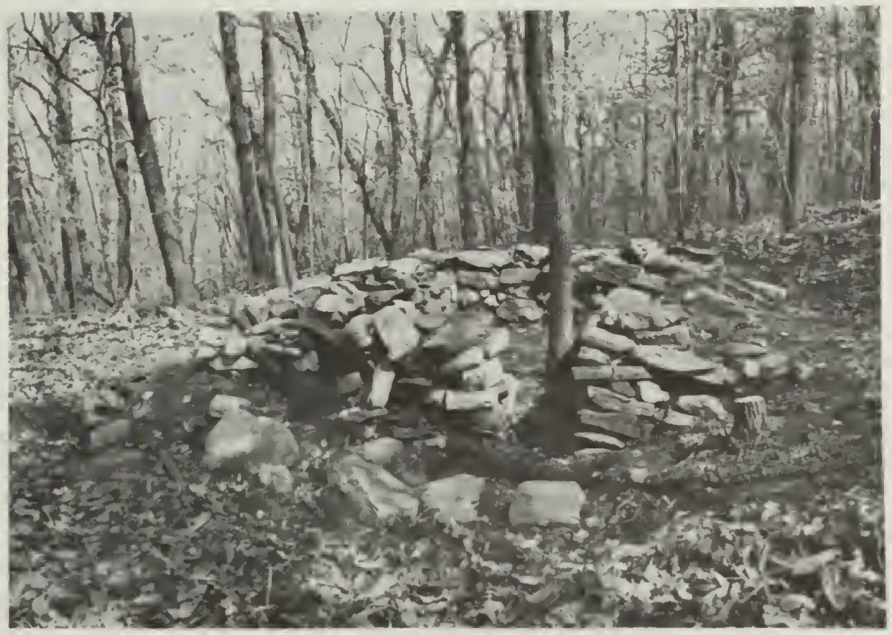


Figure 6.31 Campground Area 9. Feature CA9-F8, looking north.

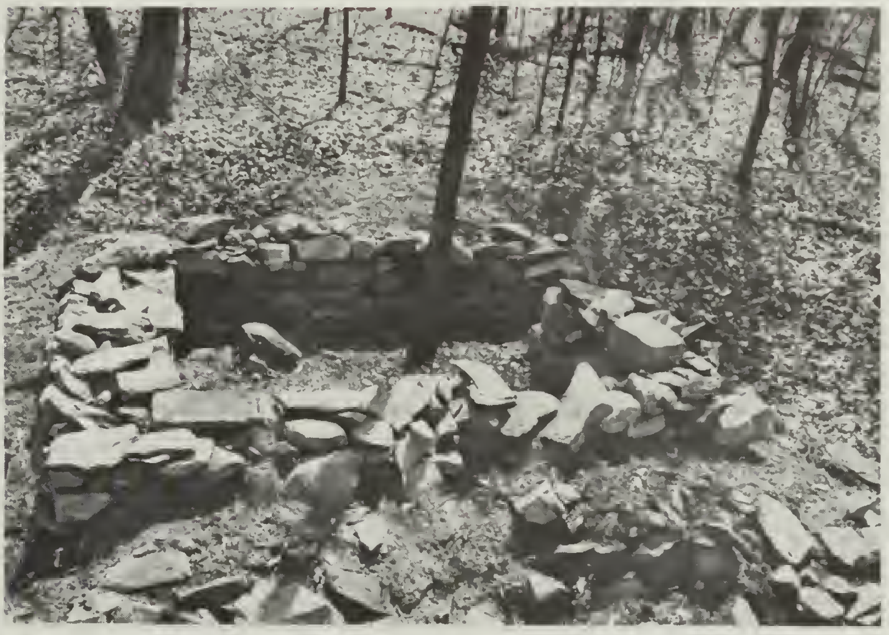
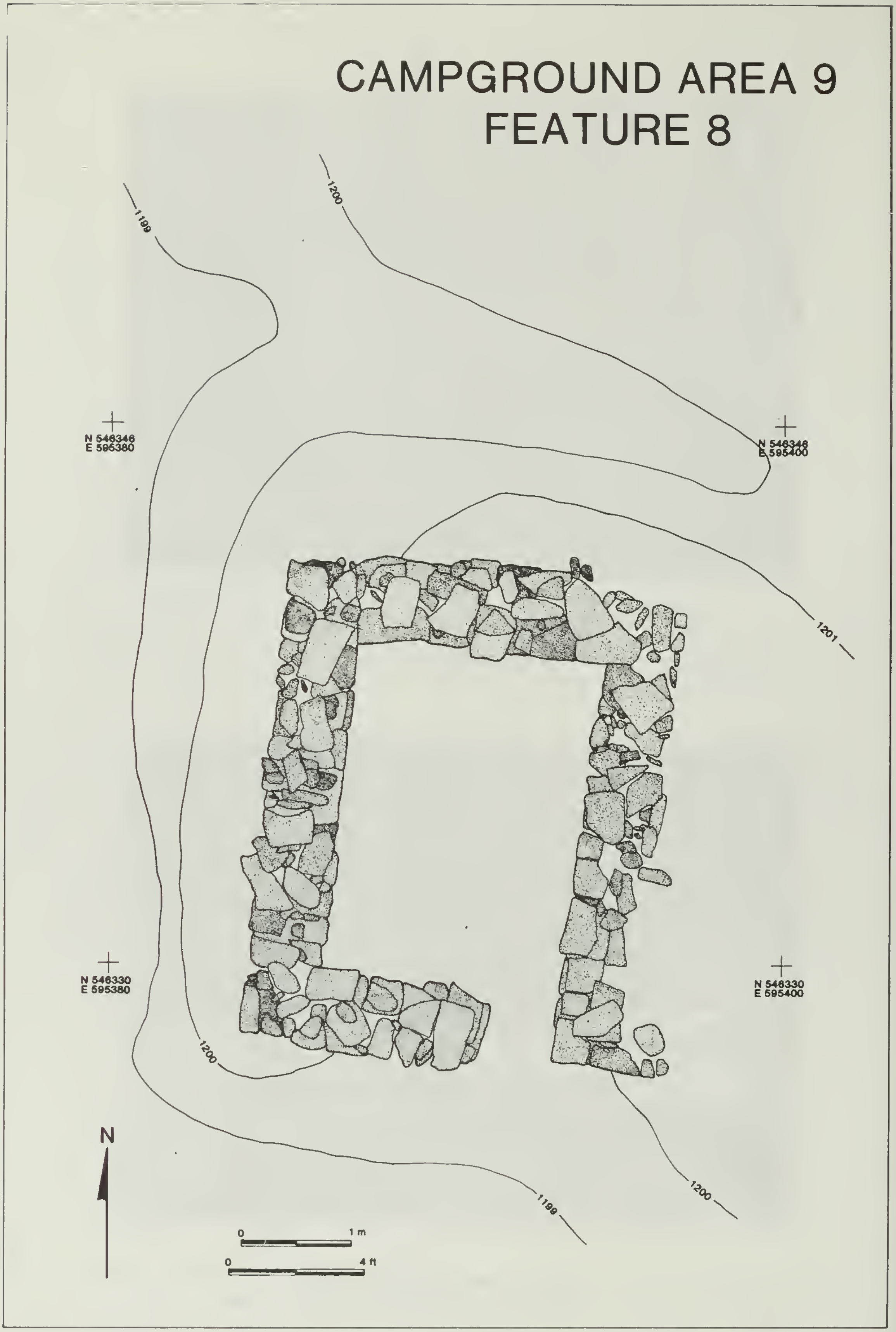


Figure 6.32 Campground Area 9. Feature CA9-F8, looking east. Overview from tree limb.



CAMPGROUND AREA 9
FEATURE 8

1199
1200
1201
N 546346
E 595380
N 546346
E 595400
N 546330
E 595380
N 546330
E 595400
1200
1199
1200
N
0
1 m
0
4 ft

Figure 6.33

In the southeast corner is a south-facing entryway two feet wide. A rubble embankment mounds against the exterior sides of the walls.

Adjacent to the west edge of Road MM sit two other stone foundations. Poorly defined Feature CA9-F7 consists of mounded stone-and-earth alignments about three feet in width. This foundation opens toward the road. About 18 ft north of Feature CA9-F7 lies Feature CA9-F6, a better-preserved stone foundation with interior dimensions of 7 x 6 ft. Only the interior north side of this feature has a defined face, which stands 1.5 ft high. The other walls are composed of rubble.

In the northeast quadrant of Campground Area 9, on both sides of Road PP, lie a number of platforms and shallow depressions. The former are comprised of Feature CA9-F3, a poorly-defined circular platform about 15 ft in diameter and edged with stone, and Feature CA9-Fl, a well-defined, rectangular platform measuring 13 x 12 ft. Two circular depressions (Features CA9-F2 and CA9-F4) six to seven feet wide and 1.5 to 2 ft deep flank Road PP. About 30 ft southwest of these two features sits Feature CA9-F5, a rectangular depression two feet deep with dimensions of 8 x 5 ft.

On the east edge of the site, constructed on the steep, short slope leading to the crest, lies Feature CA9-F13, a three-sided, dry-laid stone foundation. This feature abuts against the west face of a large, flat-sided bedrock outcropping, and has rough interior dimensions of 6 x 4 ft. The loose construction characterizing the foundation, and the fact that it is the only feature on the slope overlooking the plateau, suggests it may be a modern deer-hunting screen.

Two narrow terraces extend across the south end of Campground Area 9. A rubble embankment covers the slopes of both terraces. Terrace 1 extends a distance of about 850 ft. Terrace 2, which lies about 30 ft north of the first, is approximately 40 ft in length. Between the two terraces sits a two-sided, dry-laid stone alignment (Feature CA9-F19) with low-lying walls two feet in width. The north and east ends of this feature blend into the slope.

On the east side of Terrace 2, and in alignment with it, are two stone foundations. The first, Feature CA9-F18, has an unusual configuration, but appears to be a dry-laid stone foundation with overall exterior dimensions of 33 x 16 ft. The south wall functions as a retaining wall, while the west and north sides consist of concentrated rubble alignments. In the center of the feature is an internal rubble wall that connects with both the north and south sides. The east end of the foundation is open, giving it a sideways "A" shape.

The second foundation, Feature CA9-F17, lies less than ten feet from Feature CA9-F18. This feature has interior measurements of 10 x 7 ft. Portions of all four walls remain standing to a height of 2.5 ft. Rubble and earth mound against the exterior east and north sides. A south-facing entryway probably once existed in the southeast corner of the foundation, but it has become obscured by wall collapse. The ground between the feature and the base of the steep slope to the crest is extremely rocky.

About 15 ft uphill from the east end of Terrace 2 is a shallow, triangular-shaped depression (Feature CA9-F16) measuring 7.5 x 4 ft along its greatest axes. Above the west end of the terrace, the same distance upslope, lies Feature CA9-F12, a scattered stone concentration about seven feet across and standing 1.5 ft above the surrounding ground surface.

Off the west end of Terrace 2 sits Feature CA9-F9, an oddly-shaped, three-sided, dry-laid stone foundation open to the southwest. The north wall functions as a retaining wall and stands three feet high along its south face. Along with two short wing walls on the east and west sides, this collapsed foundation partially encloses a leveled platform with dimensions of 20 x 15 ft.

About 35 ft northeast of Terrace 2 lies a well-preserved, dry-laid stone foundation (Feature CA9-F14) that measures 11.5 x 8 ft along its interior sides (Figure 6.34). At their highest point, the walls of this feature stand three feet and are a uniform 2.5 ft in width. Rubble and earth mound around the outside of all the walls. Adjoining this foundation to the west is Feature CA9-F15, a 15 x 9 ft rectangular depression about three feet deep along its north end.

Feature CA9-F11, a massively-constructed, dry-laid stone foundation, lies in the southwest corner of the site, about 30 ft from the west end of Terrace 1. This poorly-preserved feature has exterior dimensions of roughly 25 x 22 ft. The west wall is the best defined, and is 3.5 ft wide and one-foot high. Very little remains of either the north or south walls, except for traces of mounded earth-and-rubble alignments. The low-lying east wall also is 3.5 ft wide. Twenty-five feet north of this feature lies a small, circular depression (Feature CA9-F10) four feet in diameter and approximately 2.5 ft deep.

Campground Area 10 (18WA404)

Campground Area 10 descends down the west flank of Maryland Heights directly below the Exterior Fort (Figure 6.16). The eastern end of the site lies on a steep and rocky slope, while the west half extends across a gradually sloping, basically stone-free plateau. As mapped, the campground area is roughly 1,200 ft long, but ranges in width from 100 ft at its east end to at least 400 ft along its west end.

Feature CA10-F1, a rubble wall that extends approximately 1,100 ft across the plateau, forms the north boundary of Campground Area 10 (Figure 6.35). The east end of the wall begins at the base of a steep, cliff-like slope, while the west end terminates near the edge of the plateau. This feature is in direct alignment with the south breastwork of the Exterior Fort and forms a continuation of that defensive position. In addition to defining the northern limits of the site, Feature CA10-F1 forms an arbitrary boundary between Campground Areas 10 and 11.

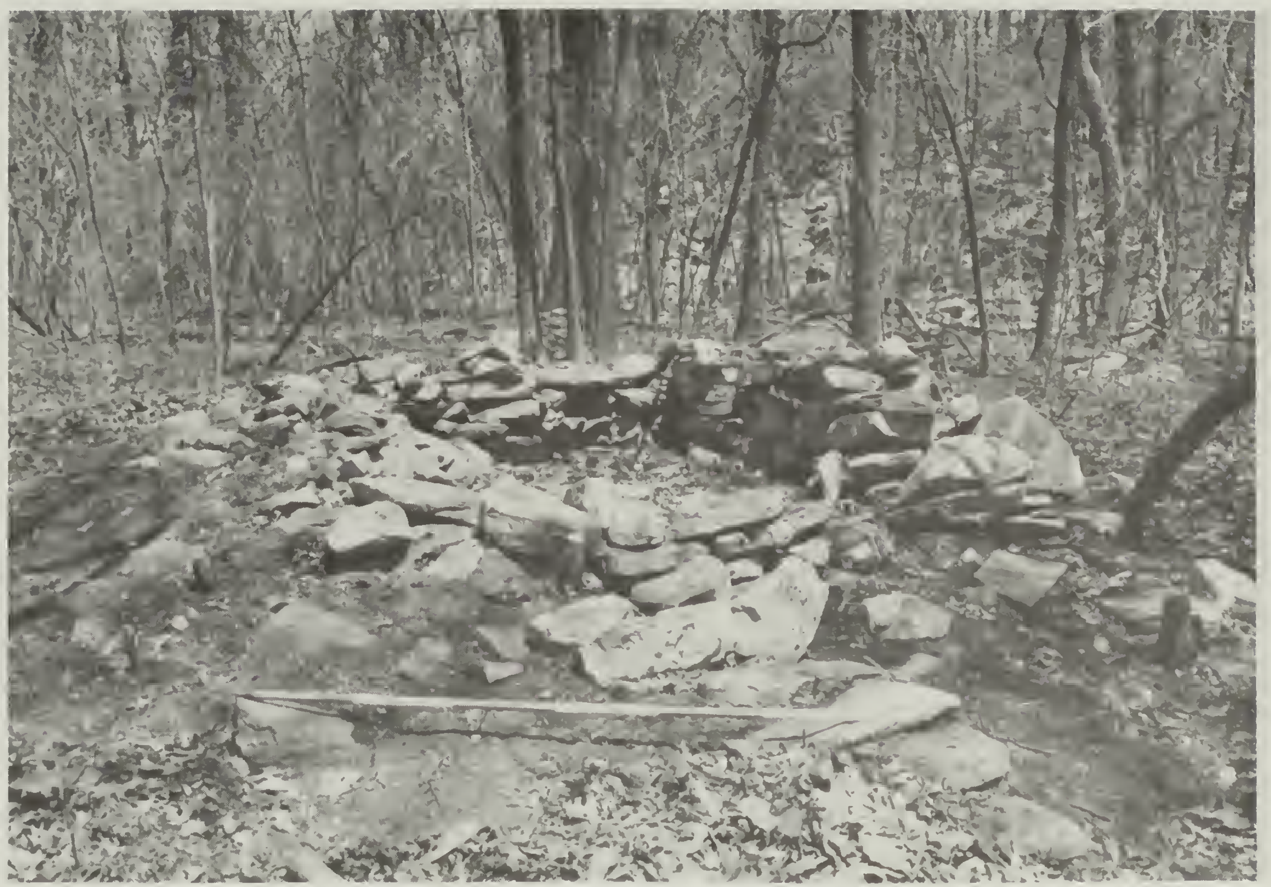


Figure 6.34 Campground Area 9. Feature CA9-F14, looking east-northeast. Note steep slope to crest in background.

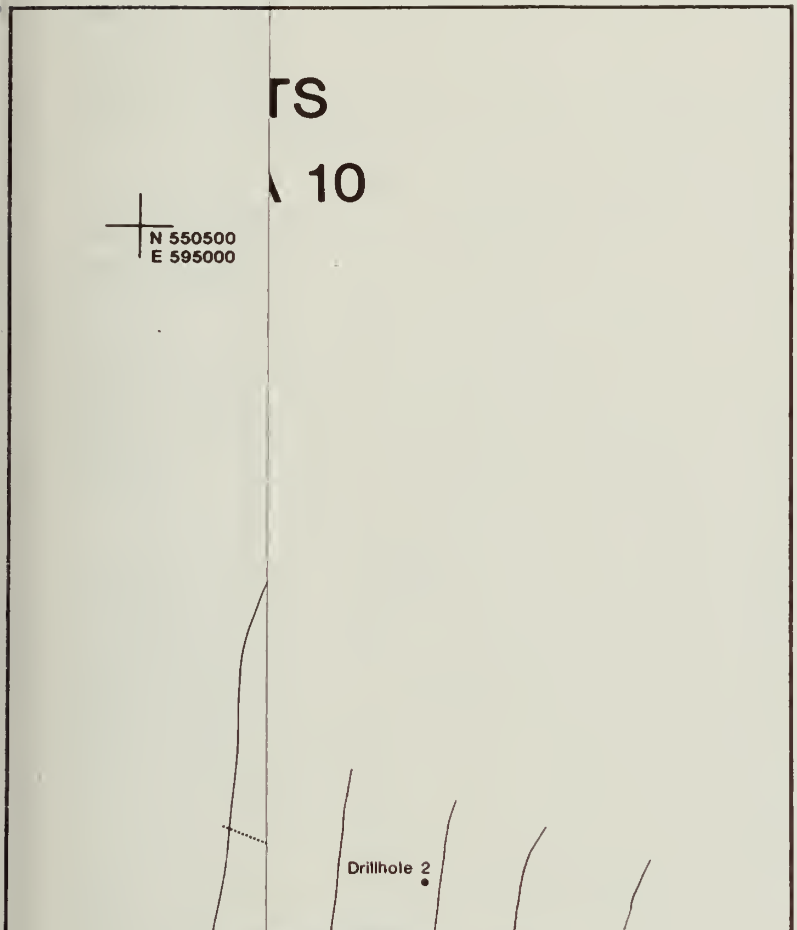
The steep, cliff-like slope establishes the eastern bounds of the site. This slope contains many large bedrock outcroppings that overlook the plateau to the west. The west boundary of the site is defined by a another steep drop-off, this one below the edge of the plateau. Definition of the southern boundary is more problematic. The features recorded in Campground Area 10 lie only a short distance south of Feature CA10-F1, even though the plateau continues much farther to the south. Without doubt, Civil War occupation covered the remainder of the plateau as well, but no above-ground features are definable. Thus the southern boundary presented here is arbitrary, as it is based on the extent of mapped features and, along its west half, the National Park Service boundary line. Within the limits presented here, Campground Area 10 encompasses almost 15 acres.

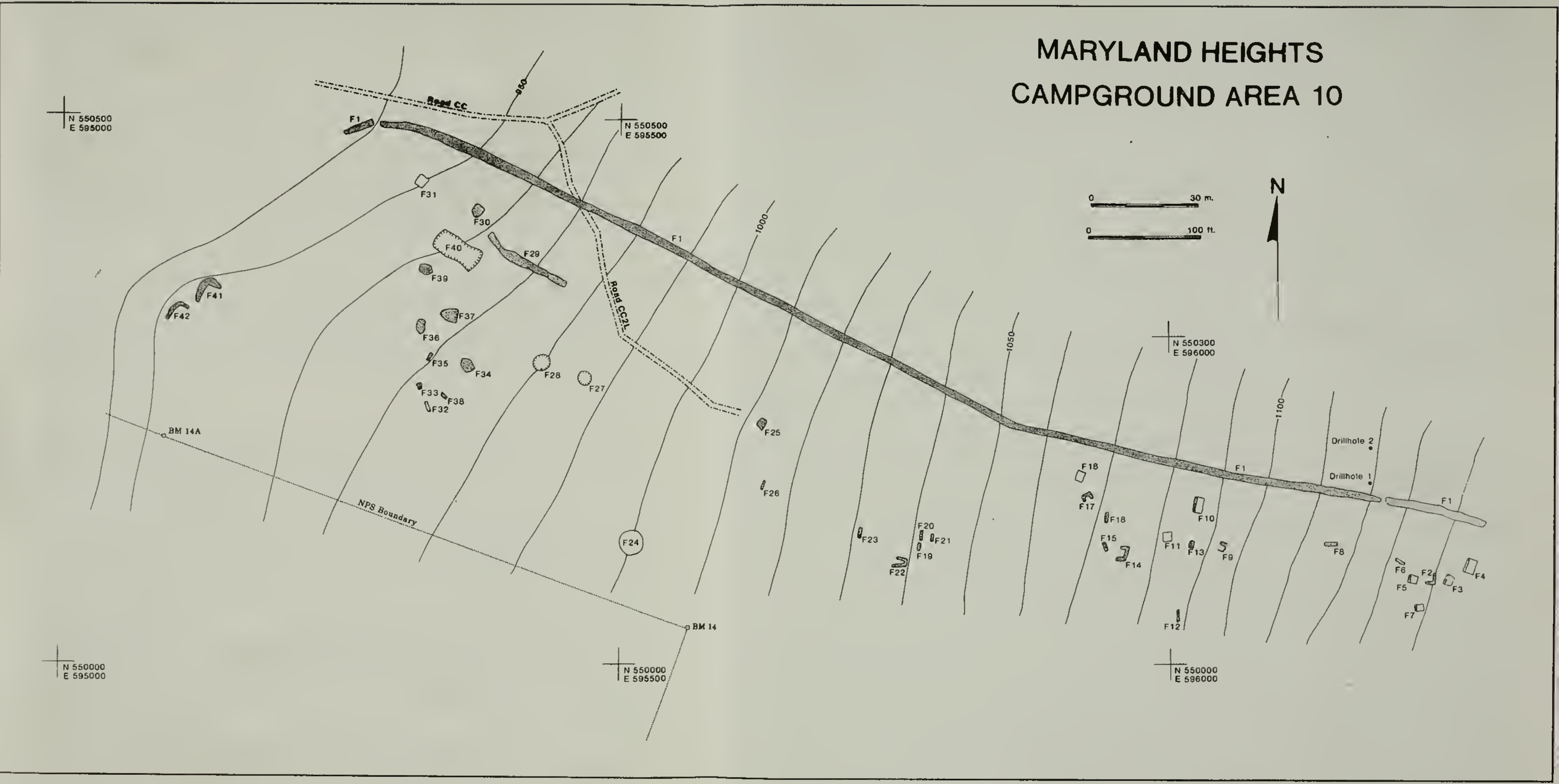
Just outside the extreme northwest corner of the campground area runs a major road trace, Road CC. This road travels up the steep slope below the site, and angles toward the northeast upon reaching the plateau. A narrow trace, Road CC2L, branches off Road CC and continues into Campground Area 10, but is blocked by Feature CA10-F1. Road CC2L fades out in the middle of the site.

Three distinct groups of features compose the east half of the campground area. The upper, or easternmost cluster (Features CA10-F2 to CA10-F7) consists primarily of leveled, rectangular platforms which average 8 x 6 ft in size. Along the west edges of each of these platforms are low-lying, dry-laid stone retaining walls or rubble edges. Exceptions are Feature CA10-F2, a two-sided, dry-laid foundation with interior dimensions of 8 x 6 ft; and Feature CA10-F6, a low-lying, dry-laid stone alignment eight feet in length and two feet wide. A short distance downslope, isolated from this group, lies a second dry-laid stone alignment (Feature CA10-F8) 11.5 ft long and 2.5 ft wide.

The scattered middle cluster of features (CA10-F9 to CA10-F18) contains a greater variety of feature types than the first group. Feature CA10-F10, a platform measuring 12 x 7 ft with a poorly-defined stone edge, sits on the south side of Feature CA10-F1. Two other platforms, the first with dimensions of 8 x 7 ft and the second 9 x 6 ft (Features CA10-F11 and CA10-F18, respectively), are located in this group as well, but neither has a stone edge or retaining wall. Features CA10-F15 and CA10-F16 are stone alignments eight feet in length. Along the south edge of the site sits a third, longer alignment (Feature CA10-F12) which extends for ten feet.

Scattered through the middle cluster of features are three dry-laid stone foundations. Along the eastern edge of the group is a poorly-preserved, three-sided stone foundation (Feature CA10-F9) open to the west with interior dimensions of 6 x 5 ft. In the middle lies Feature CA10-F14, which also is three-sided and open to the west, but is better preserved. The interior of this foundation measures 8 x 6 ft. Feature CA10-F17, which opens toward the southeast and measures about 5 x 4 ft along its interior sides, completes the stone foundations. A small, low-lying, rectangular stone concentration (Feature CA10-F13) with dimensions of 6 x 3.5 ft rounds out the middle cluster.


TS
10
N 550500
E 595000
Drillhole 2
Drillhole 1
F1
F8
F6
F2
F4
F5
F3
F7
N 550000
E 595000


MARYLAND HEIGHTS
CAMPGROUND AREA 10
0 30 m.
0 100 ft.
N
N 550500
E 595000
N 550500
E 595500
N 550300
E 596000
N 550000
E 595000
N 550000
E 595500
N 550000
E 596000
Road CC
Road CC2L
950
1000
1050
1100
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
F13
F14
F15
F16
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F28
F29
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F31
F32
F33
F34
F35
F36
F37
F38
F39
F40
F41
F42
Drillhole 2
Drillhole 1
BM 14A
BM 14
NPS Boundary

Figure 6.35

The small westernmost group of features recorded in the east half of the site is composed of four dry-laid stone alignments--Features CA10-F19 to CA10-F21 and CA10-F23--and one dry-laid stone foundation--Feature CA10-F22. The alignments all extend north-south, and range from six to ten feet in length. Feature CA10-F22 lies on the south side of the alignments. It is shaped irregularly, with interior dimensions of 10 x 5 x 13 ft, and opens toward the west.

Down slope from this last group lie several widely scattered features. These include a rectangular, low-lying stone concentration (Feature CA10-F25) measuring approximately 8 x 6 ft. Along the south side of this concentration extends a roughly-finished edge composed of small, stacked stones. The surface of the feature is relatively flat, suggesting its possible use as a platform. About 15 ft south of this stone concentration lies Feature CA10-F26, a stone alignment ten feet long and 1.5 ft wide. Small stacked stones form a rough face on its west side about one-foot in height. Along the south edge of the campground area, near the park boundary, sits a circular platform (Feature CA10-F24) 22 ft in diameter.

In the west half of Campground Area 10 is a substantial cluster of features. Feature CA10-F40, a large, rectangular hole cut into the slope along its east end and measuring 40 x 20 ft, dominates this area. Off the northeast corner of this feature lies a linear stone alignment (Feature CA10-F29) 85 ft long and ranging from four to ten feet in width. This alignment roughly parallels Feature CA10-F1, the rubble wall on the north edge of the campground area. The ground surface between these two features is extremely rocky.

Within this west group of features lie six stone piles and concentrations which vary greatly in diameter and stand up to two feet high. Scattered between the stone piles are several stone alignments. Two of these alignments--Features CA10-F32 and CA10-F35--extend eight feet in length, while the third, Feature CA10-F38, has been truncated on its north end by an uprooted tree. The alignments range from 1.5 to 3 ft in width.

On the east side of this cluster of features are two circular depressions 11 ft in diameter. The easternmost (Feature CA10-F27) measures three feet deep. Feature CA10-F28, a shallower depression, is one-foot deep. Off the west end of the group, near Feature CA10-F1, sits an isolated rectangular, leveled platform (Feature CA10-F31) cut into the slope on its east side.

Two platforms constructed of earth and rubble anchor the west edge of Campground Area 10. Crude rubble embankments define both features along their north and west sides. On the other two sides the platforms blend into the natural slope. Feature CA10-F41 has interior dimensions of 20 x 12 ft, while Feature CA10-F42 measures 15 x 8 ft. The platforms overlook a sharp drop-off to the west.

The distinct groups of features evident in Campground Area 10 most likely reflect selective survival rather than indicate where occupation was the most extensive. The recorded features tend to exist in areas with rocky ground surfaces; these stones helped outline and define features for mapping. On the other hand, the open areas on the map are cleared of stone, with faint ground anomalies too ephemeral to map.

Campground Area 11 (18WA405)

The most unusual site recorded on Maryland Heights is Campground Area 11, located on the west flank of the mountain directly below the Exterior Fort (Figure 5.13). The east half of the site sits on an extremely steep and rocky slope with a 42% grade. The west half, conversely, occupies a more gradually sloping area with less surface stone.

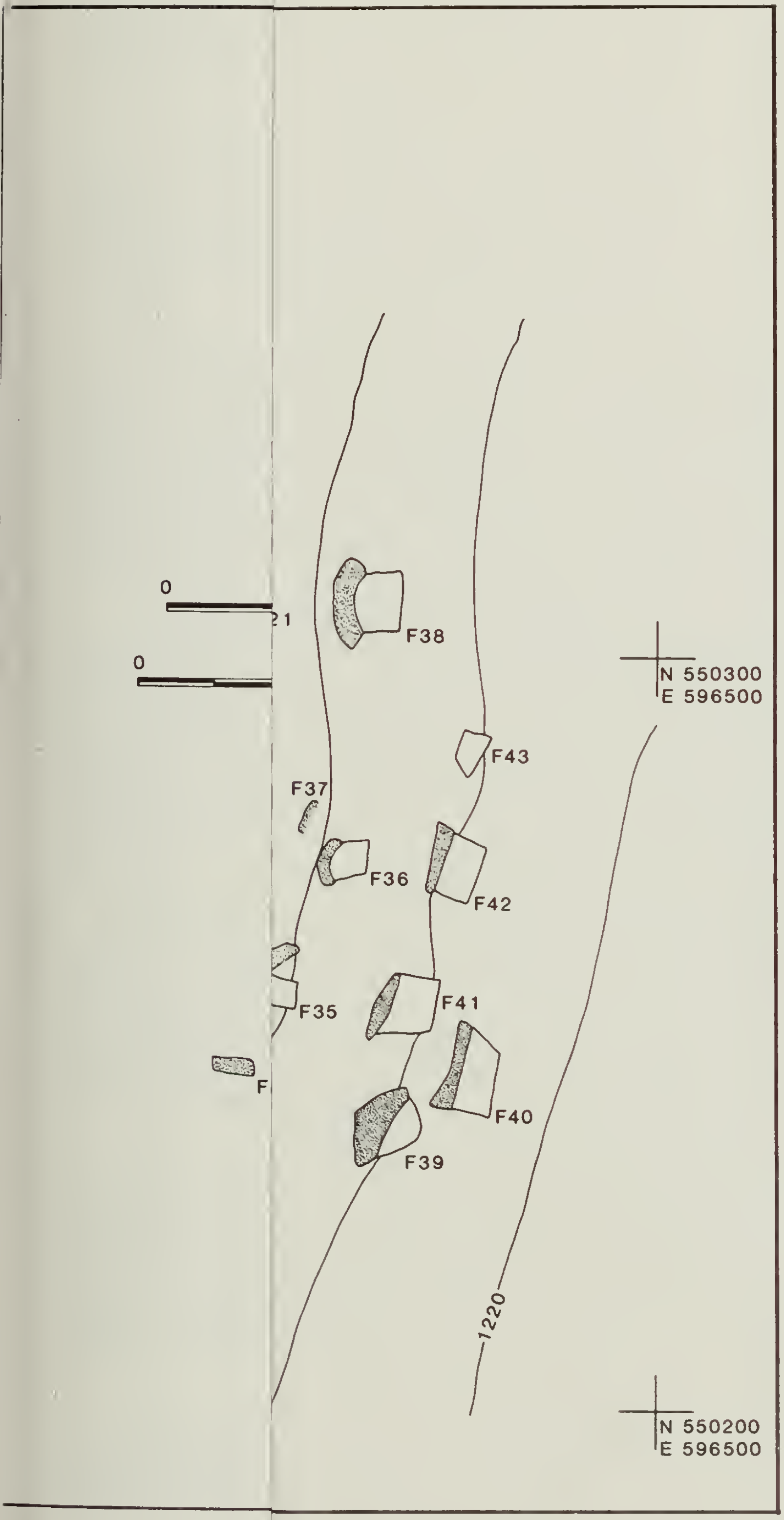
Feature CA10-F1, a long rubble wall which separates this campground area from Campground Area 10 to the south, delineates the west end of the south edge of the site. The remainder of the southern boundary is defined more arbitrarily by the ending of recorded features and several large rock outcroppings. The cessation of visible features also defines the west and north limits of the site, rather than natural or artificially constructed boundaries. The east edge of the campground area lies a short distance below the Exterior Fort; a very steep slope separates that fortification from Campground Area 11. The campground covers approximately 1.2 acres.

Four aligned, dry-laid stone foundations which extend down a gradual slope form the predominant features in the west half of Campground Area 11 (Figure 6.36). The two center features--CA11-F2 and CA11-F3--open toward the north, while Feature CA11-F4 on the east end faces west. Feature CA11-F1 at the west end of this alignment can be defined as four rubble walls, or three walls with a built-up stone retaining wall on its west side.

Less than 15 ft upslope from this line of stone foundations extends a low-lying, dry-laid stone alignment (Feature CA11-F9) nine feet in length and about one-foot wide. This alignment marks the west edge of an ephemeral, unmapped platform. About the same distance from the west end of the foundations sit two additional crudely-constructed, dry-laid stone alignments. The first, Feature CA11-F5, is curved and about 15 ft in length, 2.5 ft high, and 3 ft wide. The second, Feature CA11-F6, is very poorly defined. This alignment extends about six feet in length and is three feet wide.

Along the west edge of Campground Area 11 lie Feature CA11-F7, a platform with an L-shaped stone edge, and Feature CA11-F8, a dry-laid stone retaining wall. The poorly-preserved platform measures 6 x 5 ft. The stone retaining wall has a well-defined north face that stands about 2.5 ft high; no leveled platform was discerned on its south side.

Most of the features in Campground Area 11 lie in the east half of the site, on the extremely steep slope below the Exterior Fort. They consist primarily of leveled platforms, many with stone floors, defined by dry-laid stone retaining walls along their west edges. Since the surrounding slope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F38
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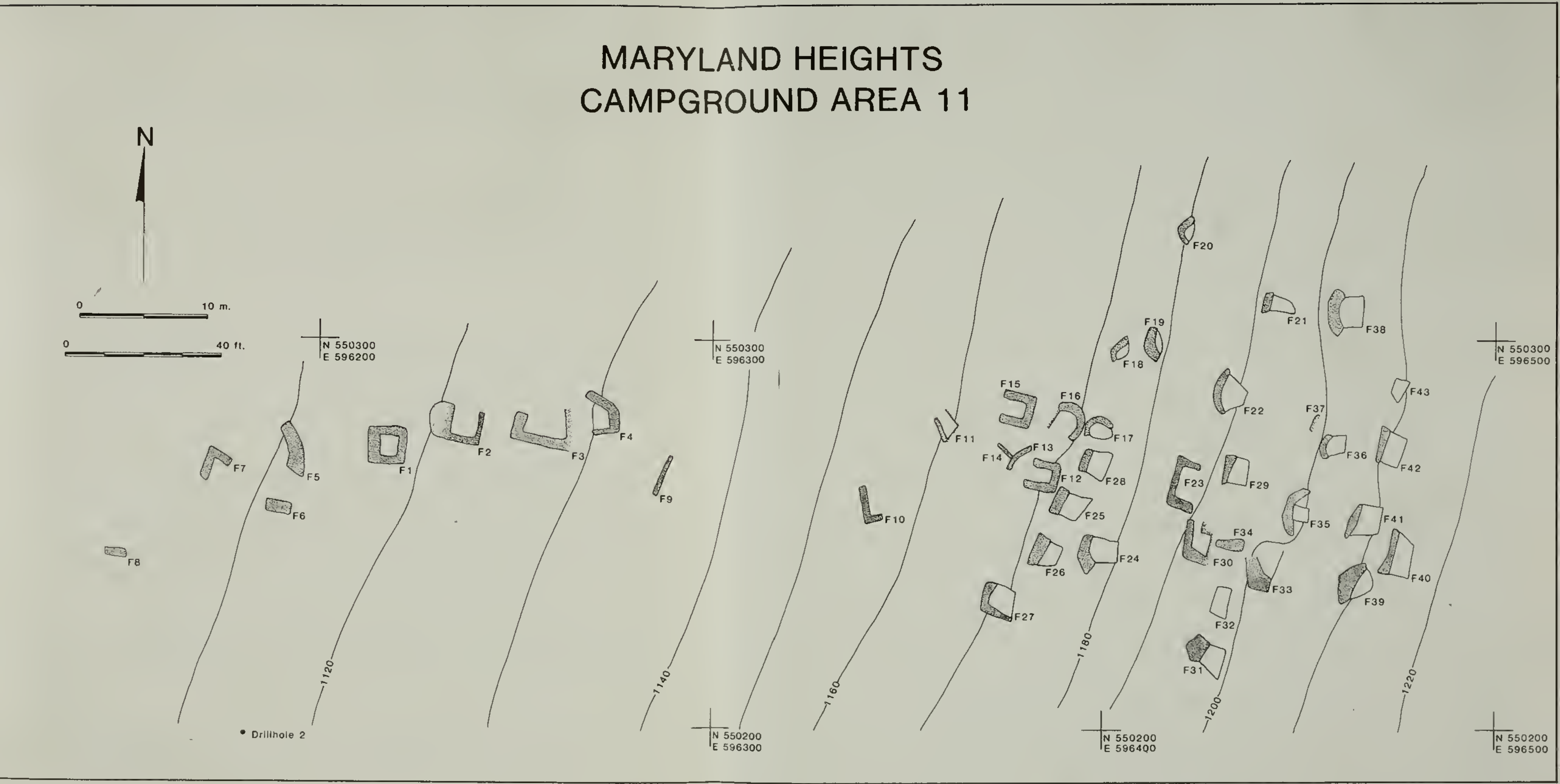
MARYLAND HEIGHTS
CAMPGROUND AREA 11
N
0
10 m.
0
40 ft.
N 550300
E 596200
N 550300
E 596300
N 550300
E 596500
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
F13
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F39
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F43
1120
1140
1160
1180
1200
1220
Drillhole 2
N 550200
E 596300
N 550200
E 596400
N 550200
E 596500

Figure 6.36

is so rocky, in many cases it is difficult to determine where the feature ends and the rocky slope begins. In fact, it appears most of the stones on the slope either have been incorporated into features or, at a minimum, moved from their original positions. Curiously, the builders constructed intentionally on this talus slope, as features do not continue into less rocky areas to either the north or south of the campground area.

The features align in four rough tiers or groups extending along the slope. Two stone foundations, Features CA11-F12 and CA11-F15, lie in the lowest, or westernmost group (Figure 6.37). Both open to the west and have comparable interior dimensions of 7.5 x 4-5 ft and 7 x 4 ft, respectively. At their highest points, the well-constructed interior walls stand 3 to 3.5 ft high.

Less than five feet west of Feature CA11-F12 lies a slightly curving, dry-laid stone retaining wall (Feature CA11-F13) eight feet long and 1.5 ft wide. The west face of this wall stands 2.5 ft high and supports a leveled stone platform on its east side upon which the stone foundation sits. Feature CA11-F14, a dry-laid stone alignment, abuts against the base of the retaining wall and extends in a general westward direction for about five feet. The west end of this feature appears to extend to the edge of a possible stone platform.

The only other stone foundation (Feature CA11-F30) situated in the east half of the campground area sits in the second group of features from the west (Figure 6.38). This foundation has interior dimensions of 6 x 5 ft and a north-facing entryway in the northwest corner about two feet in width. The west wall is constructed on top of a bedrock ledge and stands 1.5 ft high, while the east side is defined by a built-up retaining wall about four feet high which holds back the slope behind it. The south wall is 2.5 ft high and free standing.

In addition to the stone foundations discussed above, Campground Area 11 contains a number of platforms, most defined by dry-laid stone retaining walls or edges along their west sides. About half of the retaining walls or edges curve slightly. All of them, whether defined walls or ephemeral embankments, range in length from 4.5 to 10 ft, but most are six to eight feet long. The west faces tend to be battered, making the walls thicker at the base than along their top edges.

About 20 of the leveled platforms are roughly rectangular in shape. These platforms range in size from 4.5 x 4 ft to 9 x 7 ft, but the majority measure six to eight feet in length and five feet wide. Four platforms have a narrow, elliptical shape, being about twice as long as they are wide. Most of the platforms in the center and west end of the site tend to have stone floors, while those along the north and east edges cut into the dirt slope.

Several of the features situated on the steep slope in the east half of Campground Area 11 defy categorization. Feature CA11-F16 is an example of one of these rather complicated and unusual features. The primary component of this feature is a curved, crudely-constructed, dry-laid stone wall which

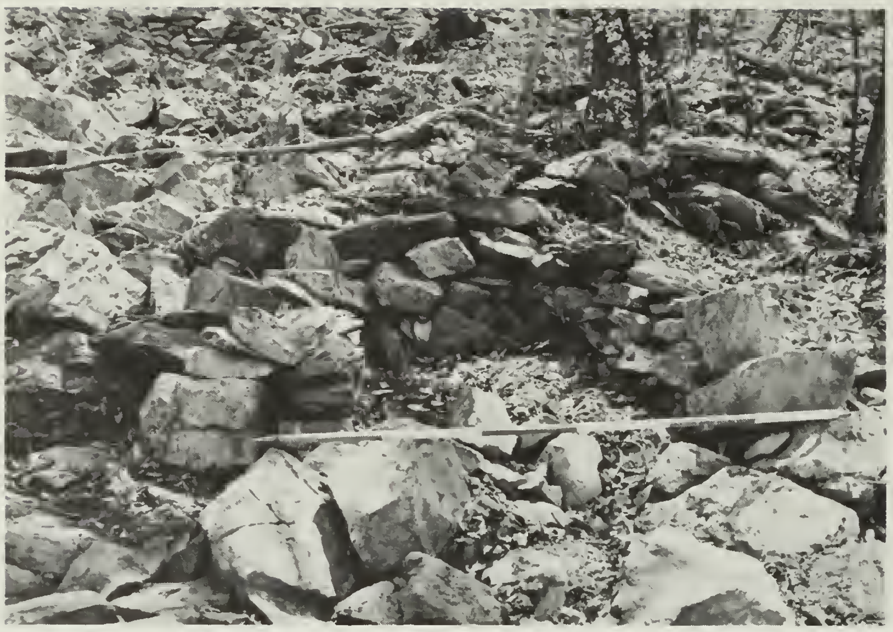


Figure 6.37 Campground Area 11. Feature CA11-F12, looking southeast

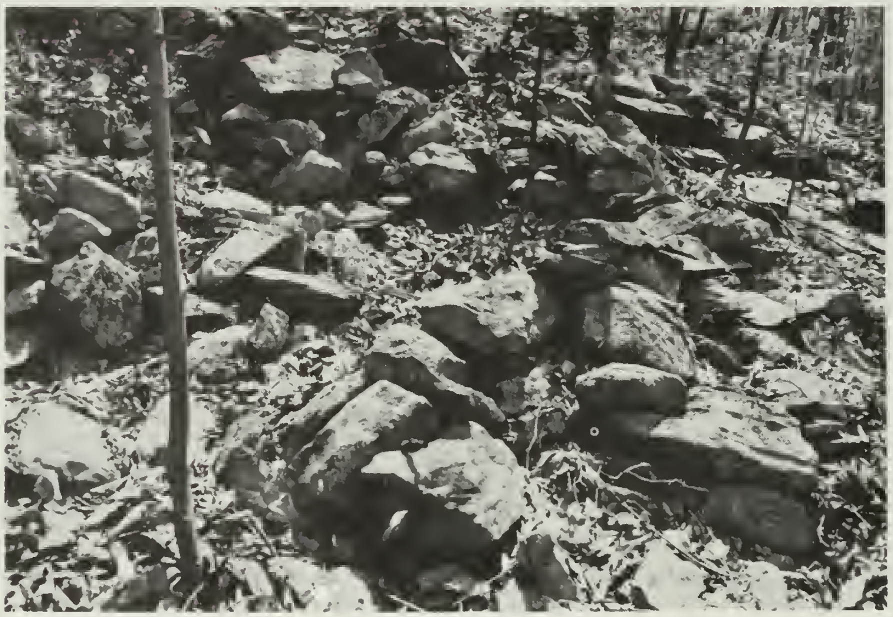


Figure 6.38 Campground Area 11. Feature CA11-F30, looking south.

extends around the north and east sides of the feature. The north half of this wall is free-standing, two feet wide and three feet high. The eastern half functions as a retaining wall, and its back edge disappears under a stone platform (Feature CA11-F17) constructed above it. Boulders define the south side of the feature, while along the west side extends a very small retaining wall standing about one-foot high. This retaining wall supports a leveled stone surface in the interior of the feature. At its widest points, the interior measures approximately 7 x 6 ft.

Campground Area 12

Campground Area 12 lies within the Exterior Fort (Figure 5.13). The two stone breastworks of that fortification bound this campground to the north and south. The south breastwork divides this site from Campground Area 2. The east boundary of Campground Area 12 is the base of the steep, upper slope forming the east end of the fort. The two end points of the breastworks define the western limits. An extremely steep slope separates this site from Campground Area 11 to the west.

All but a few of the 31 recorded features lie in the north half of the Exterior Fort, many within 60 ft of the north breastwork (Figure 6.39). Two-thirds are situated on a very steep slope which comprises the west half of the Fort interior. The features on this slope form rough, short alignments. They consist principally of leveled platforms with crude stone embankments along their west sides and three-sided, dry-laid stone foundations.

The platforms range in size from 6 x 5 ft (Feature CA12-F9) to 9 x 7 ft (Feature CA12-F14). Most are eroded and therefore not very well defined. Mixed in with the platforms are a number of stone foundations. Features CA12-F10 and CA12-F11, located near the west end of the fortification, open to the north and have approximate interior dimensions of 6 x 5 ft. Northeast of these two features lies Feature CA12-F6, a well-defined foundation containing remnants of four walls, sections of which stand two feet high; the interior measures five feet square. About 25 ft to the north, in alignment with that feature, is an ephemeral foundation (Feature CA12-F5) presently comprised of scattered stone.

Near the top of the steep slope are several stone foundations--Features CA12-F13, CA12-F15 and CA12-F16--open to the west. The interiors of these features measure 7 x 5-6 ft. The oddest of the three is Feature CA12-F13, which appears to have been modified extensively in the recent past (Figure 6.40). This is especially apparent in the northeast corner, where stone walls have been constructed on top of rotting logs.

On the gradually sloping plateau above the steep lower slope the features become more scattered. Along the west edge of the plateau perches Feature CA12-F20, an ephemeral, dry-laid stone foundation with approximate exterior dimensions of 14 x 8 ft. Above this feature sits another poorly-preserved stone foundation, Feature CA12-F23, with rough interior measurements of 8 x 6 ft. This feature may be open to the south. Slightly north of and between the two foundations is an ephemeral leveled platform (Feature CA12-F21) roughly 11 x 6 ft in size with a crude, sloping stone edge along its west side.

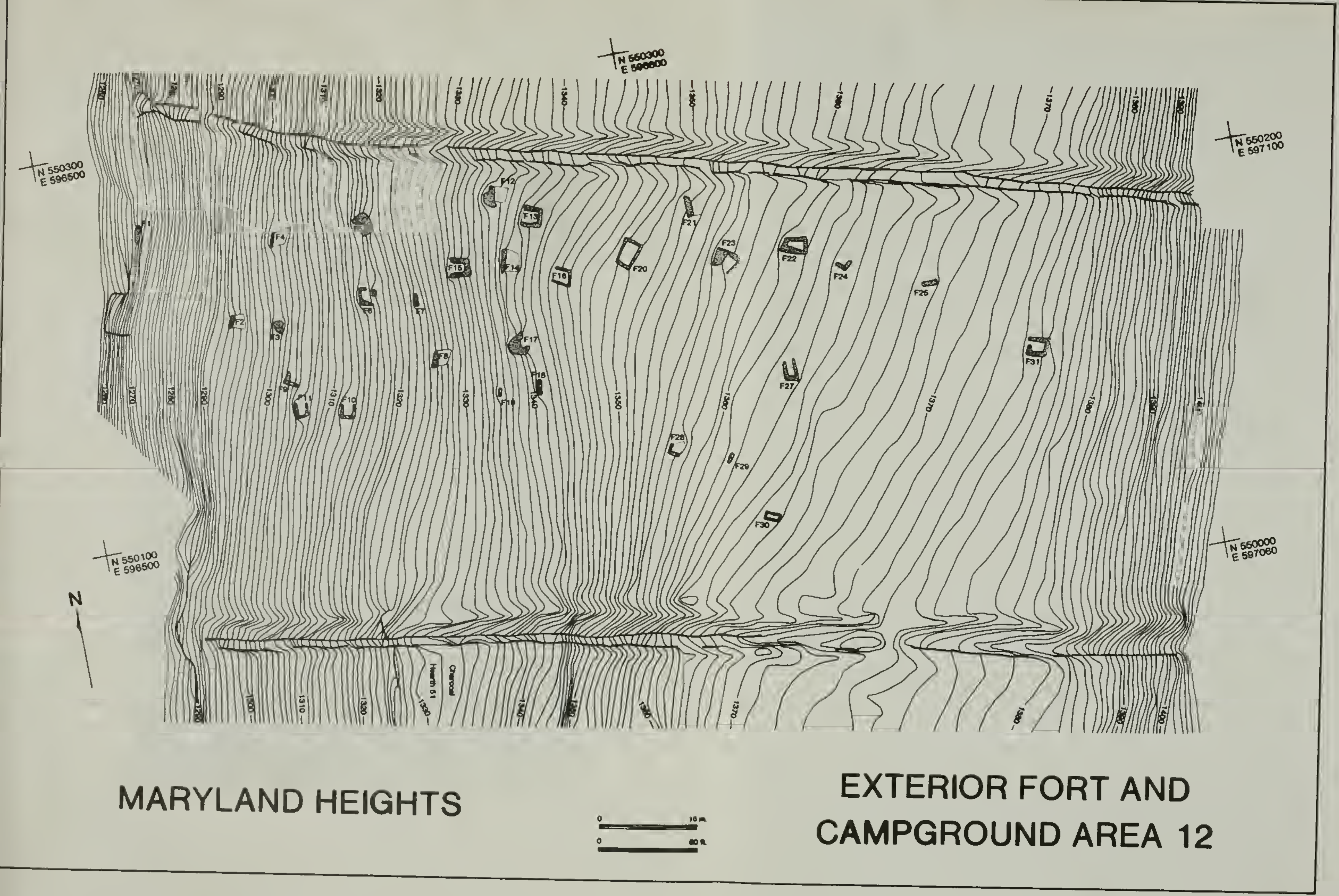
A row of three dry-laid stone foundations extends across the plateau. Feature CA12-F30, on the south end, is quite small, with interior measurements of 6 x 2.5 ft. There are no entryways through this foundation. In the middle lies Feature CA12-F27, a poorly-preserved foundation open to the north with narrow interior dimensions of about 7 x 3 ft. On the north end, 30 ft south of the north breastwork, sits a larger, four-sided foundation (Feature CA12-F22) measuring 8 x 5 ft along its interior.

Constructed into the base of the steep upper slope is Feature CA12-F31, a prominent, dry-laid stone foundation with interior dimensions of 6 x 4.5 ft. In the northwest corner stands a west-facing entryway two feet wide. The ground surface surrounding this isolated feature is very rocky.

Significantly, no features are apparent around the entrance into the Exterior Fort, which cuts through the south breastwork. In fact, only a few stone features, including Feature CA12-F31, are located along the eastern, most level half of the terrace. With the exception of the base of the upper slope, this area, along with most of the Fort interior, contains very little surface stone. Due to the gradual incline along the east half of the terrace, occupation in this area is not as apparent as in areas such as the lower slope, where the steep grade necessitated cutting leveled surfaces that remain readily visible today.

On the level plateau outside the main campground area, about 90 ft north of the north breastwork, is an isolated circular platform (Feature CA12-F26) recorded as part of Campground Area 12 (although it lies too far north to appear on the base map). This platform is raised slightly above the surrounding ground surface and measures 20 ft in diameter. A well-defined ditch four-feet wide and one-foot deep extends around the outside edge of the feature. No other features were visible on the terrace in the immediate vicinity.

N 55030
E 5965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E 596600
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Charcoal
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1280
1290
1300
1310
1320
1330
1340
1350
1360
1370
1380
1390
1400
MARYLAND HEIGHTS
0
15 m
0
50 ft
EXTERIOR FORT AND
CAMPGROUND AREA 12

Figure 6.39

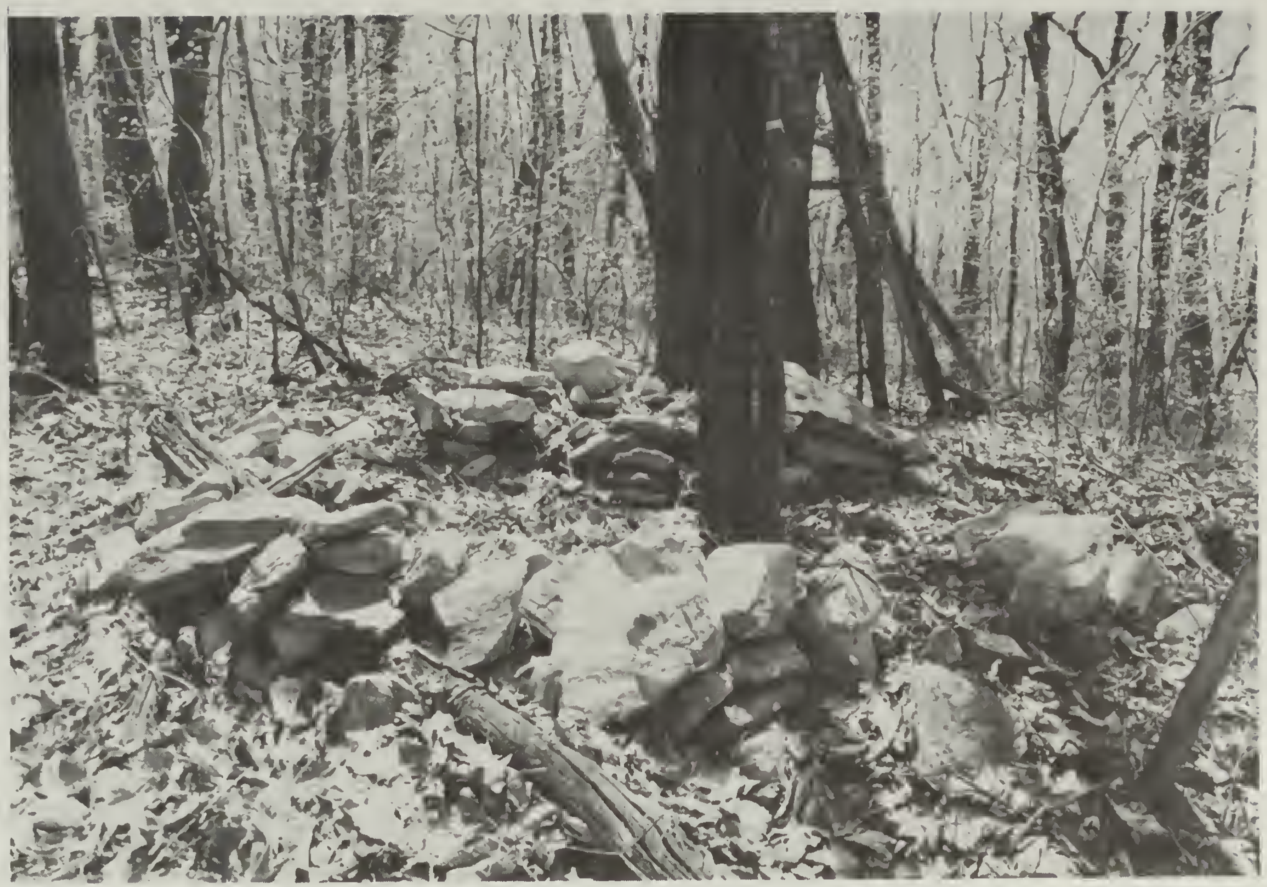


Figure 6.40 Campground Area 12. Feature CA12-F13, **looking south.** Note rotted log under northeast **corner** in left foreground.

Campground Area 13 (18WA406)

Campground Area 13 borders the east and southeast sides of the Naval Battery (Figure 5.13). It consists of a very large, scattered site encompassing approximately 13.7 acres across varied terrains.

Directly east of (or behind) the Naval Battery, a slope leads up to Road U, the main fire road. The principal feature in this area is a poorly-preserved, dry-laid stone foundation (CA13-F13) with rough exterior dimensions of 20 x 13 ft (Figure 6.41). This foundation contains two small interior compartments, divided from each other by a rough internal wall. Around the feature lies a concentration of brick fragments.

Between Feature CA13-F13 and Road U, ten oval and rectangular-shaped platforms cut into the slope. The largest of these--Feature CA13-F21--lies along the west edge of the road and measures approximately 50 x 20 ft. Water runoff from Road U has disturbed this feature extensively, and it actually may have consisted of two or three separate platforms at one time.

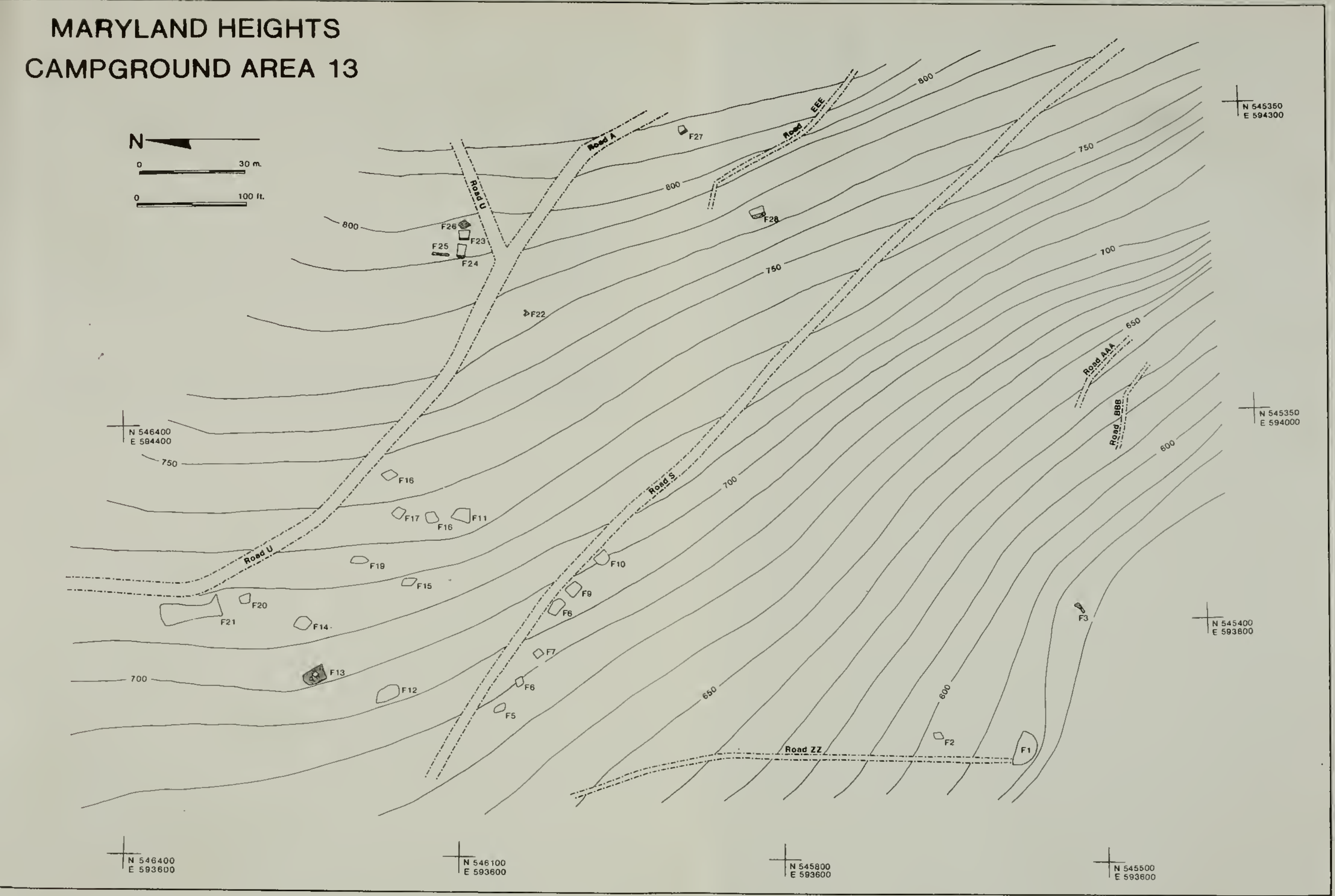
A narrow road trace (Road ZZ) extends toward the south from the southeast side of the Naval Battery. The road terminates at Feature CA13-F1, a semi-circular, leveled platform constructed into the slope and measuring about 34 x 18 ft at its widest points. The cut edge on the north side is fairly straight, while the fill side is wedge shaped. Bedrock outcroppings help support the fill side, which overlooks a steep drop-off.

About 65 ft north of Feature CA13-F1 sits a leveled platform (Feature CA13-F2) with dimensions of 7 x 6 ft. Over 100 ft southeast of the former lies an isolated feature (CA13-F3) consisting of a crude, low-lying, dry-laid stone alignment ten feet long and three feet wide. This alignment sits on a relatively level bench at the base of a steep slope ascending to the east. No other features are visible on this narrow plateau, nor on the slope above it.

A major road trace (Road S) begins near the northeast corner of Magazine 2 in the Naval Battery and extends in a southeasterly direction toward a stone quarry. Along the south edge of the road, in proximity to the battery, sit six well-preserved platforms cut into the slope. The west three, Features CA13-F5 to CA13-F6, are comparatively small and set back a short distance from the road. Features CA13-F8 to CA13-F10, on the other hand, adjoin the road and average several feet larger in size.

Along the south side of Road S, near the quarry, sits a built-up, rectangular, dry-laid stone platform (Feature CA13-F4) constructed of small to medium-sized fieldstone. This feature is set into the slope on its north side. The east side has a crude, sloping face that stands four feet high, while the south side curves outward and is 3.5 ft high. The west side has collapsed. It is not known whether the platform is associated with Campground Area 12, or with the nearby quarry. Due to its distance from the other features, Feature CA13-F4 is not depicted on the map for this site.

C


MARYLAND HEIGHTS
CAMPGROUND AREA 13
N
0
30 m.
0
100 ft.
Road A
Road EEE
Road U
Road S
Road AAA
Road BBB
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800
750
700
650
600
F1
F2
F3
F5
F6
F6
F7
F9
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F11
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E 593800
N 546400
E 594400
N 546400
E 593600
N 546100
E 593600
N 545800
E 593600
N 545500
E 593600

Figure 6.41

On the north side of the intersection of Roads A and U sit four closely-space features. Two of these--Features CA13-F23 and CA13-F24--consist of rectangular, leveled platforms with crude, dry-laid stone retaining walls along their west edges. On their east side lies Feature CA13-F26, a low-lying stone concentration measuring approximately 11 x 9 ft at its widest points. The final feature (CA13-F25) in this group is a stone alignment 16 ft long and one-foot wide. A gradual slope with little surface stone characterizes the ground surface in the immediate vicinity of the features. This holds true especially to the northwest, where no additional features are discernable.

On the south side of the intersection stands an isolated two-sided, dry-laid stone alignment (Feature CA13-F22) measuring 6 x 5 ft. About 200 ft from the intersection of the two roads, on the south side of Road A, sits another isolated feature (CA13-27), this one consisting of a rectangular platform with dimensions of 10 x 6 ft. A stone edge extends along the downslope side of the platform and forms a crude, dry-laid stone retaining wall two feet high.

Below Feature CA13-F27 extends a short, narrow road trace (Road EEE). On the south side of the road lies a long, narrow trench (Feature CA13-F28) with dimensions of roughly 15 x 6 ft and about 1.5 ft deep. Along the west edge of the trench is a poorly-defined stone edge.

CAMPGROUND AREAS INTERPRETATION

Campground Area 1

Campground Area 1 extends along the crest on the north side of the Interior Fort. Historically, the 2nd Maryland Eastern Shore Volunteer Infantry established camp in this general area during the last week of July, 1863. This regiment may have been the first Federal contingent encamped at this location, as Kaiser does not show a campground here on his January, 1863, map of the fortifications on Maryland Heights.

The 2nd Maryland Eastern Shore remained in position north of the Interior Fort until early April, 1864. Following its departure, other groups bivouacked in the camp at least through May of that year.

The fact that the 2nd Maryland Eastern Shore Volunteer Infantry wintered on the crest suggests that they constructed substantial shelters. Documentation confirms this supposition, as separate orders refer to quarters vacated by the 2nd Maryland Eastern Shore as the "Maryland Barracks."

At first glance, archeological remains do not corroborate the substantial campground implied by the historical documentation. Only fifteen features were recorded in Campground Area 1--an insufficient quantity given the number of men who camped in this area. Unfortunately, exact troop strengths for the 2nd Maryland Eastern Shore remain unavailable for this period, but several hundred men seems reasonable.

Two factors may explain the small number of recorded features, given the apparent extensive occupation. First, the campground area clearly extends north of the park boundary. This study, however, mapped only those features within the bounds of the park (although a cursory walkover outside the park revealed no substantial foundations). Secondly, the main plateau, although displaying no obvious features, has been cleared of all surface stone, with faint ground anomalies evident across it. Structures, such as the barracks mentioned in historical records, may have been constructed of wood, thus leaving no visible traces.

On the east side of Campground Area 1 stands a cluster of 13 mapped features. The six stone foundations within this group probably functioned as bases for shelter tents, since the features' 6 x 5 ft average size approximates the 5'6" by 5'5" dimensions of that tent type. These low-lying foundations also may have supported log superstructures or huts. Surrounding platform and stone alignments may have provided leveled areas for tents.

Feature CA1-F2, a circular platform on the very top of the crest, most certainly marks the location of a Sibley tent. These circular tents measured 18 ft in diameter, close to the 17 ft recorded for the platform. A neighboring stone-lined pit (Feature CA1-F13) may be associated with the Sibley tent platform, but its function remains unknown.

Feature CA1-F15, a stone foundation adjacent to Road H, may have functioned as a guardhouse which defended approaches up that major roadway. The feature's location, overlooking the road, and its thick walls suggests this possibility.

Since archeological excavations were not conducted as part of this project, defining specific activity areas within the campground remains impossible at this time. The features on the east side of Campground Area 1, along the short slope leading from the ridgetop to the plateau, possibly represent officers' quarters or other specialized buildings. On the other hand, they may be the slippery and rocky habitations of a hapless group of privates not lucky enough to receive a spot on the level plateau.

Campground Area 2

Col. P. A. Porter's July, 1863, illustration of fortifications and encampments on Maryland Heights identifies the plateau on which Campground Area 2 sits as the "2nd plateau" (Figure 6.7). At that time, the 9th Maryland Infantry occupied this campground. The 9th Maryland remained at this position until August, 1863, when it transferred to Loudoun Heights. No other documentation presently is available for Campground Area 2.

The physical remains of Campground Area 2 indicate its occupation extended well beyond the short summer visit of the 9th Maryland. The archeological survey recorded 72 features in this area, many of them substantial stone foundations that imply a long-term sojourn by one or more groups.

In the descriptive section detailing Campground Area 2, the features were divided into three groups. For the purposes of this section, these divisions are retained.

On the extreme northern end of the campground sits Feature CA2-F1, a large, dry-laid stone foundation. This feature most likely represents the foundation of a stockaded blockhouse designed to protect the only entrance into the Exterior Fort, which lies only 25 ft to the north. This feature thus associates more with the adjoining fortification than with Campground Area 2, although the men who guarded this approach may have encamped at the latter location.

The north group of features consists principally of cleared tent platforms, probably for shelter tents, and dry-laid stone foundations, either for shelter tents or log superstructures. The crude alignments apparent on the base map suggest these tents and/or structures sat in rows extending east-west. Although the general dimensions of these features tend to be similar, both for platforms and stone foundations, the individuality displayed in their design imply some latitude in construction techniques by the builders.

Scattered around the edges of this group of structural features remain four circular platforms that mark the locations of Sibley tents. These tents could provide shelter for 12 to 20 men, although they also functioned as cookhouses, hospitals, and ammunition depots. In addition to the circular platforms, a number of small, circular depressions--three on the west edge and two along the southern extent--border the rocky area enclosing the north cluster of features. The function of these depressions remains unclear.

The ground surface around the north group of features is extremely rocky, while the ground to the west and south is almost free of all stone. Faint anomalies in these cleared areas reveal occupation--the west edge most likely by small shelter tents, and the south side perhaps by larger wedge or wall tents. Interestingly, with the exception of Feature CA2-F3, this occupation does not appear to extend north of Features CA2-F4 and CA2-F10, which suggests a clear physical separation between the campground area and the Exterior Fort.

The middle group of features contrasts greatly with the north group. The features recorded in the former are larger and unique in configuration when compared to the latter. As a result of this diversity, in combination with the fact that these features are more dispersed, the middle grouping possibly may represent a special activities area rather than a habitation site.

Specific functions of the various features in this area can only be surmised without archeological testing. Several features, specifically CA2-F37, CA2-F41 and CA2-F42, apparently form an interrelated complex with their linear embankments in alignment with each other. Feature CA2-F34--the large hole at the west edge of this group--may have functioned as a magazine for small arms munitions or some other type of storage. Its five-foot depth and rectangular base typify other magazines on Maryland Heights.

Feature CA2-F45, a rubble wall extending across the plateau, may delineate a boundary between two separate camps--one containing the north and middle group of features, the other the southern cluster. More evidence for this supposition may be derived from the rubble wall along the west edge of the plateau, Feature CA2-F2, as it does not continue south of Feature CA2-F45. The gap between these two walls may have functioned as an entryway into the camp, with Feature CA2-F43, a short, oddly-configured rubble wall, restricting the approach. In addition, Feature CA2-F44, a rectangular depression adjoining the west end of the Feature CA2-F44 rubble wall, may define the location of a guardhouse at this possible entrance.

The south half of Campground Area 2 extends about 900 ft south from Feature CA2-F45. This narrow, relatively level area has been cleared of almost all surface stone, and it contains faintly perceptible ground anomalies. Along the west side of this area, closely bunched together, stand 19 stone features with several shallow, rectangular depressions around the periphery.

The north half of this cluster consists of stone piles that appear randomly placed. These piles have no structural integrity and perhaps represent efforts at removing surface stone. The south half, on the other hand, is comprised of two well-defined rows. Within the north row sit two small stone foundations (Features CA2-F61 and CA2-F62) that may have supported a shelter tent or log superstructure. The remaining stone features situated in the two rows presently are definable only as piles or scatters. Since two stone foundations are evident in this group, it is possible that the other features once formed structural foundations, but have since lost all integrity.

The reason for construction of this one cluster remains unknown. Perhaps, again, these stone features represent a special activity area.

Campground Area 3

Campground Area 3 lies at the extreme south end of the same plateau which Campground Area 2 sits upon, but is separated from the latter by approximately 500 ft of extremely rocky ground. Campground Area 3 is identified on Col. P. A. Porter's July, 1863, map as his headquarters (Figure 6.7). Other than this one reference, no other information has been discovered concerning who encamped here and the dates of that occupation.

Campground Area 3 does not appear to have been large, as relatively few features are evident. Ephemeral, unmapped platforms, however, imply at least some occupation south of Roads MM and MM2L, and on the slope along the east side of the campground area. Two of these platforms, Features CA3-F7 and CA3-F8, were defined sufficiently to map. The two features probably functioned as shelter tent platforms.

In association with the two platforms is Feature CA3-F5, a dry-laid stone wall with a leveled platform on its west side. A tent or log structure probably stood on the platform, while an opening in the center of the wall probably served as a stove or fireplace flue.

Three substantial stone foundations dominate the rocky center of the site. These most likely represent footings for log superstructures, and one may have functioned as Colonel Porter's headquarters. Another candidate for this distinction is Feature CA3-F11, a dry-laid stone alignment 17 ft long with an entryway in its center. This alignment may have supported a structure on its east side.

Interestingly, with the exception of Feature CA3-F4--a platform large enough to have supported a wall tent or log structure--these stone features are isolated, with no others in direct association. The diffused, isolated character of these features upholds the identification of this area as a command center. The central location of Campground Area 3 relative to several other campgrounds and the roads leading to them also supports the command center concept.

On the steep slope between Campground Area 3 and the 100-pounder Battery on the crest sits Feature CA3-F9, a substantial stone foundation measuring 15 x 7 ft. This feature, although recorded as part of Campground Area 3, may be more closely associated with the battery or with Campground Area 6, a short distance to the north. The strategic location of this foundation, combined with its large size, suggests its possible role as a guardhouse. Logs most likely comprised the superstructure.

Feature CA3-F10, located at the north end of the campground area, resembles a rifle-pit. This three-sided foundation is constructed of thickly battered rubble several feet thick, and faces the plateau to the west.

Campground Area 4

Federal soldiers inhabited Campground Area 4 throughout the occupation of Maryland Heights. The earliest documented bivouac belonged to Company B, 1st Massachusetts Heavy Artillery (formerly 14th Massachusetts Infantry), who arrived at Christmas time, 1862. Following the evacuation of the heights on June 30, 1863, Company K of the 8th New York Heavy Artillery occupied this campground. It remained until the end of July, when replaced following the return of Company B, 1st Massachusetts. After four months the Massachusetts troops were succeeded by Company I of the 5th New York Heavy Artillery. The 5th remained at this position until at least January, 1865.

The Kaiser map of January, 1863, presents a graphic representation of Campground Area 4 (Figure 6.6). Even a cursory comparison of this map with the archeological base map (Figure 5.13), however, reveals little resemblance between the two. This produces questions concerning the accuracy of the campgrounds portrayed on the Kaiser map. While fortifications and associated structures such as magazines are carefully illustrated (in perspective, if not in scale), the campground areas all appear stylized. An alternative explanation suggests that extensive changes occurred in the campgrounds between the time Kaiser drew his map and the end of the war.

Kaiser depicts a road extending through the campground from an entrance into the Interior/Exterior Fort complex. No road trace is apparent today at that entryway, although the south part of Road JJ may correspond to that section of the roadway passing between the two rows of circles and then angling downhill.

The archeological features recorded in Campground Area 4 reveal no overt patterns in size and distribution. In fact, the area that probably witnessed the most extensive occupation--the level plateau on the south side of the Interior Fort--contained few definable features, although faint ground disturbances were visible.

On the south edge of the plateau sit three stone features that may represent the location of a special activity area. Feature CA4-F19, a built-up rubble alignment, forms a narrow rectangular platform that probably supported a barracks or other wooden structure. The second feature, CA4-F20, functioned as a retaining wall, and may have supported a structure on its north side. The function of the third feature, CA4-F21, remains unknown. On both the west and east sides of the stone features are faint, unmapped anomalies that imply occupation in these areas as well.

In the center of the campground stands an alignment of four stone foundations (Features CA4-F14 to CA4-F17). Nearby is a fifth stone foundation (Feature CA4-F12), a platform (Feature CA4-F13), and a stone alignment (Feature CA4-F18). The stone foundations provided bases for log or tent superstructures, while the platform and stone alignment probably supported tents--the first a shelter tent, the second a wedge tent. Unknown is whether this small group of stone features served a special function, perhaps as officers' quarters.

Two linear stone features--CA4-F3 and CA4-F8--extend along the west edge of the crest. These alignments may define the west edge of the campground area, and/or they may represent defensive breastworks overlooking the west slope of the mountain. The latter possibility is suggested by Feature CA4-F2, a large rubble foundation anchored on the north end of Feature CA4-F3, which may have functioned as a guardhouse or blockhouse. In addition, two small stone foundations (Features CA4-F4 and CA4-F5) situated on the steep slope below the west edge of the crest may represent small defensive positions such as rifle-pits.

Feature CA4-F9, a rubble wall defining the south extent of Campground Area 4, functioned principally as a defensive breastwork to guard against attack up the east slope. This wall restricted access to the camp from Road H, the primary road extending up the east side of Maryland Heights, leaving only one narrow entryway below Charcoal Hearth 37. A small stone foundation on the south side of the breastwork, Feature CA4-F11, may be a rifle-pit or other defensive position.

Campground Area 5

No historical documentation has been uncovered for Campground Area 5. As a result, its dates of occupation and the identity of the units encamped there presently remain unknown. The campground occupies a terrace on the east slope of Maryland Heights, directly below the Stone Fort. It sits on the west side of Road H, the primary access up the east flank of the mountain.

Dominating the center of Campground Area 5 is a single, isolated stone foundation, Feature CA5-F10. This large foundation, measuring 12 x 10 ft, may represent an officer's quarters, perhaps of the commander himself.

On the north side of the main foundation is an alignment of features. The central feature in this group, CA5-F6, forms a well-preserved Sibley tent platform. This platform is flanked by the remnants of two stone foundations (Features CA5-F5 and CA5-F8) that represent footings for either log structures or tents. In turn, depressions border the two foundations on the sides facing the Sibley tent platform. These depressions probably functioned as a base for a structure or tent platform, and most likely are associated with the stone foundations they adjoin.

Several shallow depressions of unknown function complete the alignment of features. Along the north edge lie a small circular hole (Feature CA5-F2) and a rectangular depression (Feature CA5-F3). Mirroring Feature CA5-F2 on the south end of the alignment is a second small, circular feature (CA5-F9). In fact, the two halves of the compete alignment basically mirror each other, with the Sibley tent platform in the center. It is possible these features delineate a special activity area or that they quartered officers.

The terraces along the south end of Campground Area 5 represent efforts to level the ground surface, most likely for rows of tents. Two stone alignments along Terrace 2--Features CA5-F12 and CA5-F13--probably functioned as support for a couple of these tents. The eight-foot length of the alignments suggests the possible use of wedge tents, which measured 8 ft 4 in by 6 ft 10 in. On the next terrace lie three stone concentrations (Features CA5-F11, CA5-F14 and CA5-F20) that originally may have been defined foundations.

Against the base of the steep slope leading to the Stone Fort are a number of irregular-shaped depressions. The purpose of these depressions, which range in size from 7 x 7 ft to 30 x 15 ft, remains unclear. It is likely the three holes in the center of this alignment--Features CA5-F17 to CA5-F19--are associated as they lie in close proximity to each other. Two additional features along this alignment, a stone alignment (Feature CA5-F21) and a platform (Feature CA5-F22), suggest that structures were located in this area.

Two stone walls, Features CA5-F1 and CA5-F27, define the east edge of Campground Area 5. These walls also functioned as breastworks defending against attack from the east. The fact that these walls enclose Charcoal Hearth 8 suggests the hearth was incorporated into the position, perhaps as a gun emplacement. In summary, the purpose of this campground may have been to guard the east flank of the mountain and to protect approaches to fortifications and other campgrounds on the crest.

Campground Area 6

Campground Area 6 lies on the crest a short distance north of the 100-pounder Battery. Unfortunately, this small campground appears on none of the historical maps, and the only documents which mention possible encampments here state that Company K, 5th New York Heavy Artillery, was responsible for the nearby 100-pounder Battery after November 30, 1863.

Thus, Campground Area 6 may have been home to a detachment of that company, and it possibly guarded access to the gun emplacement from the north as well.

Only a few features have been recorded for Campground Area 6; however, the ground surface has been cleared of all surface stone, and slight undulations and anomalies across the crest suggest relatively extensive occupation. The definable features consist of several shallow structural depressions with the exception of Feature CA6-F3, a rubble alignment extending along the east edge of the crest. This alignment marks the east boundary of the campground, and it may have served also as a breastworks defending the crest against attack from the east.

Campground Area 7

Campground Area 7 straddles the crest on the south side of the 100-pounder Battery. Like nearby Campground Area 6, this area most likely was home to a detachment of Company K, 5th New York Heavy Artillery, detailed to man the battery after November 30, 1863. Without doubt, this campground is associated with the gun emplacement, as no apparent physical divisions exist between them.

Again, while few features have been recorded for Campground Area 7, the stone-free ground surface and slight, unnatural undulations point to military occupation across the plateau. Two pairs of rectangular depressions may mark the northern and southern boundaries of the campground. The northern pair, Features CA7-F2 and CA7-F3, sit just south of two powder magazines. The other pair, Features CA7-F5 and CA7-F6, lie at the south edge of the plateau, at the point where it begins to dip southward.

Dominating the southeast corner of Campground Area 7 is a large, irregularly-shaped stone foundation (Feature CA7-F4) measuring roughly 18 x 15 ft. Very little structural integrity exists for this feature, obscuring any explanation of its function. It may possibly have been a guardhouse or blockhouse.

Along the east edge of the crest is a stone retaining wall, Feature CA7-F1, which forms a platform on its west side. The fact that this feature lies directly opposite a platform recorded as part of the 100-pounder Battery suggests the two are associated. Most likely the platforms were gun emplacements, perhaps for mortars or for mountain howitzers.

Campground Area 8

An open, level plateau on the north side of the Mortar Battery defines Campground Area 8. Although no features were recorded in this campground area, ephemeral ground anomalies were noted, and the ground surface obviously had been cleared of all stone. A detachment of Company K, 5th New

York Heavy Artillery, may have occupied this area, as it was responsible for the Mortar Battery.

Campground Area 9

Campground Area 9 lies on the north side of the 30-pounder Battery. Historical records indicate that Company I, 1st Massachusetts Heavy Artillery (formerly 14th Massachusetts Infantry) occupied this position in October, 1862. With the exception of a few short periods, Company I remained at the 30-pounder Battery for slightly more than a year, leaving at the end of November, 1863. Company F of the 5th New York Heavy Artillery shared this bivouac for a short period in June and July, 1863.

Following the transfer of Company I, 1st Massachusetts, another unit of the 5th New York Heavy Artillery, Company K, occupied the battery. This company remained in position here until the end of the war.

George Kaiser illustrated the 30-pounder Battery campground in his January, 1863, plan of that fortification (Figure 6.8). Kaiser depicts an alignment of three squares and four circles, with an isolated circle to the northwest. It is possible the two large, well-preserved stone foundations in the southeast corner of Campground Area 9, Features CA9-F14 and CA9-F17 (or CA9-F18), correspond to two of the squares shown on the map. In addition, Feature CA9-F1, a large, well-defined tent or hut platform aligned with the stone foundations, may represent the third square. Interestingly, the three features extend in a true north-south direction.

Evidence for the four aligned circles depicted by Kaiser is less apparent. Only one Sibley tent platform, Feature CA9-F3, was recorded, and it lies east of the aligned features discussed above. Adjacent to this Sibley platform are two smaller, circular depressions (Features CA9-F2 and CA9-F4) six to seven feet in diameter--too small for Sibley tents. Their function presently is unknown.

On the west side of Road MM sit two stone foundations (Features CA9-F6 and CA9-F7) aligned in a north-south direction, slightly to the west of the first alignment of foundations. These alignments suggest the campground was laid out along the cardinal directions, but other evidence is contradictory. Two built-up terraces at the south end of the campground extend in a general northwest to southeast direction along the slope. Several major features, including CA9-F9, CA9-F17 and CA9-F18, align with the terraces.

Along the west edge of Campground Area 9 sits the best-preserved stone foundation on Maryland Heights--Feature CA9-F8. This isolated feature exhibits superb workmanship in its construction, suggesting a probably role as quarters for a highly-ranked individual. The placement of the foundation in an apparent charcoal hearth, with no other features around it, also implies an important function for this feature.

In the southwest quadrant of the campground area are two imposing stone foundations. Feature CA9-F9, a large platform with walls on three sides, probably served as the level base for a substantial structure. Feature CA9-F11 is a massive structural foundation about 25 x 22 ft in size. Both these features may represent special activity areas associated either with the 30-pounder Battery or the campground rather than habitation sites. Documents reveal both a guardhouse and a cookhouse at the 30-pounder Battery, so perhaps these foundations represent those structures.

Compared with other campground areas on Maryland Heights, relatively few sections of Campground Area 9 are cleared of surface stone, and few ephemeral anomalies have been noted. Instead, the majority of the features are substantial in size and exhibit fairly good construction techniques. As a result, it is suggested that the recorded features as a whole represent special activity areas and officers' habitations. Possible bivouac areas for enlisted men include the terraces constructed along the south end of the campground, and the ground around Road PP, but few surface indications are evident.

Campground Area 10

Campground Area 10 stretches across a broad plateau behind (east of) the Spur Battery, and a short distance up a steep, rocky slope. On its south side, the campground extends outside the national park boundary; this area is not included in the survey. Without doubt the campground area also continues southward within the park, but no definable features could be discerned.

Col. P. A. Porter's July, 1863, map of Maryland Heights shows the 10th Maryland Infantry and Snow's Battery B, Maryland Light Artillery, in position on the Spur Battery plateau (Figure 6.7). The 10th Maryland remained at this location until the beginning of November, 1863. Records for Company M, 5th New York Heavy Artillery, reveal that a detachment of this company manned the Spur Battery from August-November, 1864.

The east half of Campground Area 10 consists of stone alignments, platforms and stone foundations. The majority of these measure 8 x 10 ft, and thus probably supported wedge tents or some other rectangular shelter. No patterns are apparent in the distribution of the features, except for the fact that they group together in three broad clusters. These clusters of recorded features most likely reflect survival of features in rocky, definable areas rather than where occupation was the most extensive.

Several features associated with the Spur Battery defensive position, most of which lie outside the park boundary, define the north boundary of Campground Area 10. Feature CA10-F40, a large rectangular hole, probably functioned as a magazine. Two earth-and-rubble platforms on the west edge of the plateau--Features CA10-F41 and CA10-F42--most likely represent gun emplacements, as they overlook a sharp drop-off to the west.

Feature CA10-F1, a rubble wall extending approximately 1,100 ft across the plateau, defines the north boundary of Campground Area 10. This feature served a defensive function, originally forming a breastwork of log cribbing filled with stone. This breastwork, constructed in June, 1863, comprised part of the Barnard line and guarded against attack from the north. The wall lies in direct alignment with the south breastwork of the Exterior Fort.

Around Feature CA10-F40, a rectangular hole, sit six stone piles and concentrations that reflect the removal of stone from the surrounding ground surface. Along the south end of the stone piles sit several stone alignments averaging about eight feet in length; these alignments may denote the locations of wedge tents. A short distance east of the stone piles lie two circular depressions (Features CA10-F27 and CA10-F28). Too small for Sibley tents, their purpose remains unknown.

On the north side of Feature CA10-F40 lies a linear stone alignment, Feature CA10-F29, which extends 85 ft from the northeast corner of the magazine. The function of this alignment is unclear, although it, too, may represent efforts at stone removal, perhaps during excavation of the magazine.

Along the south edge of the campground sits an isolated Sibley tent platform (Feature CA10-F24). While no additional features were recorded in the immediate vicinity, the stone-free ground surface suggests additional occupation in this area.

Campground Area 11

No historical documentation exists for Campground Area 11, an eccentric campground perched on an extremely steep slope below the Exterior Fort. In fact, the vertical terrain at this location defies logical placement of any camping area at this site.

Initial interpretations suggested this site functioned not as a campground, but as the extreme northern defense of the Spur Battery area. The steep slope located just north of the Barnard Line provided a natural advance position for individual riflemen, presenting a clear field of fire toward the north or west. From behind the shelter of stone walls aligned along this precipitous slope, not only could the Federals protect the Spur Battery, but they also could prevent a flanking movement around the western end of the Exterior Fort.

Careful examination of features at this site defy their explanation as defenses, however. On the site's eastern side, for example, where the slope rises abruptly, most of the features consist of leveled platforms with their western edges defined by dry-laid stone retaining walls. As defenses, these features would provide good cover when firing west; but since few of these features have walls facing north, they offer no protection from attack from that direction.

The wall arrangement of two larger structures on the site's eastern half further confuses interpretation of this area as a defensive position. Both Features CA11-F12 and CA11-F15 are three-sided stone structures with their open side, or side with no wall, facing west--exactly opposite the structures described in the previous paragraph.

Since the site shows no uniform arrangement, perhaps it represents an incomplete defensive work. When the Federals first established the Spur Battery here in mid-June, 1863, they chopped trees, constructed log and stone breastworks (the Barnard Line), excavated magazines, and erected platforms for their guns. Perhaps, for extra protection, they began constructing individual rifle-pits on the steep, rocky slope just north of the Barnard Line. These rock strong points may not have reached completion by June 30, 1863, the date the Federals evacuated the mountain. Although the Union troops returned to Maryland Heights and the Spur Battery one week later, they possibly determined these individual rifle-pits superfluous. Thus they remained incomplete.

If interpreted as incomplete defenses, this site may actually predate June, 1863. Without the Spur Battery and the Barnard Line at this position, the Exterior Fort remained vulnerable to a flanking column advancing along the mountain's western slope. This site may represent an aborted effort to provide protection to the Exterior Fort's western flank.

Although certainly cramped and uncomfortable, this site probably represents a campground for one company of hardy infantry. The stone platforms carved out of the steep, rocky slope on the site's eastern side provide, in most cases, enough sleeping space for two men covered by a shelter tent. The stones comprising the platforms' foundations are level, suggesting extra care in construction to insure adequate floors in each quarters. Stone retaining walls along the western edge of most platforms certainly provided extra support for the tenuous leveled areas sliced into the steep slope.

Fewer features exist in the western half of the site, even though the grade is less precipitous. The two large structures and platforms dominating the center of the western half (Features CA11-F2 and CA11-F3) possibly supported wedge tents for the company commander and his immediate subordinates. The fact that fewer structures stand in this area, although more practicable for a camp than the steeper eastern sector, also suggests occupation by officers.

At most, this campground received occupation at only two times--late June, 1863, and July, 1864. In both instances, Confederate advances into the North forced the Maryland Heights commanders to post extra infantry at the Spur Battery. Most of the infantry no doubt encamped on the wide plateau spanning east and south of the battery. Some unlucky footsoldiers, however, drew Campground Area 11 as their temporary and uncomfortable quarters.

Campground Area 12

This site is the only campground on Maryland Heights located within a fortification--the Exterior Fort. Most of the other recorded campgrounds lie adjacent to a fortification, but Campground Area 12 sits between the north and south breastworks of the Exterior Fort.

Unfortunately, no known records identify the occupants of this campground. Its builders and period(s) of use therefore remain anonymous.

Since this site lies within a fortification, one interpretation suggests Campground Area 12 existed prior to the construction of the Exterior Fort. During the winter of 1862-1863, before work commenced at the Exterior Fort, the civilian laborers and skilled craftsmen building the Stone and Interior Forts certainly required shelter from the harsh winter weather. This workforce possibly located its camp on the plateau west of (and below) the Interior Fort. As work neared completion on the Stone and Interior Forts, the army next began building the Exterior Fort's breastworks. As the north and south walls of this fortification stretched down the west slope, the breastworks encompassed the workers' campground. Thus a camp within a fortification.

The apparent lack of any disciplined, military arrangement of the structures at this site lends some credence to its interpretation as a civilian encampment. Features reveal no uniform dimensions and minimal alignment. Three-sided dry-laid stone walls, which possibly represent crude foundations for log superstructures or tent covers, descend down the slope with no pattern and with open ends facing west or north or south. Several structures with long, narrow appearances--such as Feature CA12-F30 (6 x 2.5 ft) and Feature CA12-F27 (7 x 3 ft)--if used as quarters, certainly allowed no more than one occupant. This runs counter to the Maryland Heights standard of two to six soldiers per hut or tent site.

The lack of surface stone on the upper slope or east side of the campground indicates probable occupation, but not necessarily. Most of the stones in this area no doubt formed the north and south breastworks of the Exterior Fort, so the absence of surface stone here does not portend an area cleared solely for an encampment. With the stones removed, however, the gradually sloping plateau did provide a good encampment site. Perhaps stone foundations once occupied this plateau, but they may have been dismantled and the stones used in constructing or improving the breastworks. Possible foundations on this plateau may also have been removed to provide an unobstructed field of fire from the south breastwork looking north. Then again, the absence of permanent structures and substantial ground features on this plateau may suggest its occupation with tents only.

None of the contemporary maps show a campground at this site. George Kaiser's January, 1863, illustration depicts the encampment south of the Stone Fort and the two parallel lines denoting the Exterior Fort; but Kaiser includes no camp within the Exterior Fort (Figure 6.6). Col. P. A. Porter's July, 1863, drawing--although not as exact as Kaiser's map--also shows no encampment within the Exterior Fort (Figure 6.7). Failure to identify this encampment on the maps suggests three possibilities: 1) the camp did not yet exist; 2) it had been abandoned; or 3) oversight by the mapmakers.

Although historical records do not specify who occupied this campground, documents do reveal two companies of the 1st Maryland Volunteer Infantry performing picket and guard duty on the crest from mid-December, 1862, through the first week of April, 1863. Following the withdrawal of the Marylanders, Company D and Company M of the 6th New York Heavy Artillery reported to the crest for guard duty. These two companies established "Camp Kitching," named in honor of their regimental commander Col. J. Howard Kitching; and these companies remained on top of the mountain into June, 1863. With the exception of its proximity to the crest, the exact location of Camp Kitching remains unknown. Perhaps Campground Area 12 represents a site first occupied by a 1st Maryland Infantry detachment and then later by a company of the 6th New York Heavy Artillery.

The circular platform (Feature CA12-F26) located on a level plateau 90 ft north of the Exterior Fort's north breastwork certainly represents a Sibley tent site. The peculiarity of this feature is its isolation--no other structures or platforms appear on the surrounding terrace. This apparent isolation lends itself to several interpretations. The Sibley may have provided shelter to a picket post guarding approaches to the Exterior Fort. It may have served as a kitchen for the encampment within the Exterior Fort. Perhaps the site functioned as a hospital. One document--Special Order No. 86, dated September 24, 1864--detailed a male nurse to the hospital near the Stone Fort. Morning Reports for Companies L and M, 5th New York Heavy Artillery, reveal on November 19, 1864, the death of Pvt. Franklin J. Florida of typhoid fever "in hospital near Stone Fort." Although these sources do not precisely locate the hospital, an infectious disease such as typhus required quarantine. This isolated Sibley may have served as the treatment area for infectious disease victims.

Campground Area 13

Three separate illustrations from three different time periods--including one photograph, one sketch, and one map--show encampments east and north of the Naval Battery.

A long-range photograph from Camp Hill in August, 1862, portrays the camp of Company F, 5th New York Heavy Artillery, about one month prior to the siege of Harpers Ferry (Figure 5.10). Under magnification, the camera reveals nine sibley tents--standing in one row along a northeast-southwest axis--comprising the center of the camp. Just behind this row stands a flag staff, with a Sibley tent posted on each side of the staff. Two wall tents sit at the far upper right of the clearing, and just below these (south) appear two Sibley tents bordering the woods.

Nothing in the archeological record resembles the layout described above. No alignment of platforms for Sibley tents exists today; and furthermore, no Sibley platforms appear at any location around the Naval Battery. Feature CA13-F21 may have hosted several Sibleys, but piles of erosion debris have obscured the function of this feature. A section of Road U east of Feature CA13-F21 runs several feet south of its original alignment, and perhaps this new course obliterated any traces of the row of Sibleys so evident in the photograph.

The absence of Sibley platforms is particularly odd considering the excellent preservation of Sibley platforms elsewhere on Maryland Heights. Even if later adapted for other purposes, such as supporting smaller wedge tents or wall tents, the familiar circular platforms still should remain.

Since the ground east of the Naval Battery slopes gradually, erosion may have destroyed some of these platforms; but postwar farming activity probably explains the reason for the Sibleys' absence. Barbed wire stretches around much of the Naval Battery site, suggesting the property owners (the Kilhams) used the area as a pasture. Whatever the cause of the Sibley platforms' disappearance, the 1862 photograph certainly shows Sibley tents in use at the Naval Battery.

Kaiser's January, 1863, plan view of the Naval Battery also depicts rows of Sibley tents at this site (Figure 6.10). In this case, the encampment belongs to Company H, 1st Massachusetts Heavy Artillery (formerly 14th Massachusetts Infantry), who occupied this battery almost continuously from late September, 1862, until the last day of November, 1863. Kaiser places this encampment almost due north of the battery, but this study yielded no evidence of Sibley platforms nor any other features at this location. Barbed wire surrounds this area as well, suggesting the postwar pasture described above also encompassed this site.

During the final 17 months of the war, the records reveal only one period of occupation. From September-November, 1864, a detachment of Company M, 5th New York Heavy Artillery, garrisoned this position. No known documents reveal the composition, size, or location of this company's encampment. The existing features east of the Naval Battery may be associated with this final period of occupation, or they may represent the occupation depicted in the long-range sketch from Loudoun Heights in the fall of 1862 (Figure 6.9). All of the oval and rectangular platforms between Road U and Road S, as well as those along the south side of Road S, could support wedge tents. Larger wall tents, in fact, could sit upon most of these platforms. The dry-laid foundation at the west end of this campground (Feature CA13-F13) may have served as an officer's quarters.

Bricks and brick fragments appear throughout this campground, especially in proximity to platforms. Soldiers probably retrieved these bricks from the Harpers Ferry armory site, using them for fireplaces, patios, floors, and bake ovens.

Two features at the junction of Road U and Road A (CA13-F23 and CA13-F24) may have served as watchposts for sentries or as officers' quarters. The gradual sloping plateau north of these features has been cleared of stone, suggesting a probable encampment site for a regiment of the 1st brigade of the 1st division of the Twelfth Corps in the fall of 1862.

Road ZZ extends approximately 350 ft south of the Naval Battery, terminating at a wedge-shaped platform (Feature CA13-F1) which overlooks a steep dropoff. No known records identify the purpose of this site, but it may have served as a platform for a 24-pounder howitzer. From this advanced position, a howitzer could fire not only across the Potomac, but also upon the Harpers Ferry Road below. The isolated stone wall located east of this platform may have protected pickets or sharpshooters.

SUMMARY AND CONCLUSION

Stone Foundations, tent platforms, and plateaus cleared of stone identified Civil War campground areas on Maryland Heights. With these clues as evidence, archeological survey recorded 13 campgrounds--encompassing nearly 60 acres of encampment--scattered over the mountain. Nine of the 13 campgrounds occupy the crest or the plateau just below and west of the crest. Two of the campgrounds lie in the vicinity of the Spur Battery halfway down the mountain's west slope. One campground sits east of the Naval Battery on the mountain's southwest slope, and one occupies the eastern side on a plateau below the Stone Fort.

Eight of these campgrounds lie adjacent to fortifications or batteries; and with the exception of Campground Area 1 (north of the Stone Fort), heavy artillery companies or detachments probably occupied these sites. A regiment of infantry definitely occupied Campground Area 1 and probably Campground Area 2 (south of the Exterior Fort on the plateau west of the crest). Due to its smaller scale, an infantry detachment probably utilized Campground Area 5 (on the plateau east of the Stone Fort) and Campground Area 11 (on a steep slope northeast of the Spur Battery). Since Campground Area 3 lies adjacent to Road U--the primary road leading up the mountain's west slope--it may have functioned as a command post or supply area rather than as an encampment.

Contemporary sources such as maps, diaries, and letters seldom provide data on the location and layout of Maryland Heights encampments. More often than not, soldiers describe their camp location in vague terms, such as "on the crest" or "halfway up the west side." Although detailed descriptions of individual huts or tents often appear--including information on dimensions, composition, and construction techniques--soldiers often neglect to describe the overall physical appearance of their camps. As a result, few historical records provide information on the layout of a camp. Even maps which show camp layouts freeze encampments in time, allowing no provision for modifications during future occupations.

Camp layout should be no mystery if the encampments on Maryland Heights followed the specifications prescribed in the Revised U.S. Army Regulations of 1861. Adherence to regulations proved impossible on Maryland Heights, however, because of uneven and rugged terrain. For example, the regulations define the perimeter of an infantry camp as 400 by 431 paces (1200 x 1293 ft). No plateau on Maryland Heights is wide enough to accommodate these standards. Terrain limitations subsequently forced regimental and company commanders to improvise camp layouts; but even in improvisation, one would expect military rigidity to produce definite patterns in layout.

This archeological study, however, revealed no patterns--no rows of buildings; no rows of platforms; no defined patterns whatsoever. Numerous explanations may account for this absence of apparent organization in the camps. Perhaps the garrison commanders required no formal camp layouts, allowing each soldier instead to build his own platform or hut within a prescribed boundary or area. Perhaps formal patterns did exist, but initial erosion in the treeless campgrounds obliterated most of the evidence. Perhaps formal patterns still remain, but 125 years of humus accumulation has buried platforms and foundations beneath the soil. Perhaps successive troop occupations at the same locations altered previous camp layouts, creating a confusing overlay of several different occupations. Since this study conducted no archeological excavations, much of the campground history of Maryland Heights still remains unknown.

This study did record 319 features above the ground or at ground level in the 13 Maryland Heights campgrounds. These features generally divided into five categories: 1) stone foundations; 2) platforms with stone retaining walls or rubble embankments; 3) platforms cut into the ground without stone retaining walls or rubble embankments; 4) Sibley platforms; and 5) stone walls or stone piles. Total numbers of the five categories break down as follows:

Stone Foundations	75	(24% of 319 features)
Platforms with stone	73	(24%)
Platforms without stone	44	(14%)
Sibley platforms	9	(3%)
Stone walls & stone piles	69	(22%)

Several stone walls mapped as part of a campground actually form infantry defenses. In other cases, however, these walls form either a camp boundary or simply a wall of stones piled after their removal from an adjoining plateau.

Almost all of the platforms with or without retaining walls or embankments are large enough to support shelter tents (approximately 6 x 6 ft), and more than half of these could support the larger wedge tent (about 9 x 7 ft). Dimensions for stone foundations vary widely, ranging from small shelter tent sites to a massively constructed foundation at the 30-pounder Battery with exterior dimensions of 25 x 22 ft.

The best preserved stone foundation on Maryland Heights sits in the encampment north of the 30-pounder Battery (Feature CA9-F8). The interior faces of all four walls are well-defined and uniformly 2.5 ft wide. Its interior dimensions measure 9.7 x 7 ft, and a 2 ft-wide entry enters the southeast corner of the structure. This structure probably belonged to an officer in Company M, 5th New York Heavy Artillery, who occupied the area for the final 17 months of the war.

In terms of acreage, Campground Area 10 ranks as the largest, encompassing 15 acres on the plateau east and south of the Spur Battery. Two sites share the distinction of smallest campground--only 1.2 acres comprises Campground Area 8 (north of Mortar Battery) and Campground Area 11 (northeast of Spur Battery).

Although approximately five acres smaller than Campground Area 10 (adjoining the Spur Battery), Campground Area 2 (on the plateau west of the crest and south of the Exterior Fort) has nearly double the number of features of the Spur Battery campground. The 72 features in Campground Area 2 include 14 stone foundations and four Sibley platforms, both of which are records in their particular category.

Campground Area 11 (northeast of Spur Battery) contains the highest number of features in the least amount of space. Its 27 stone platforms and seven stone foundations lie in only 1.2 acres, most of which forms a 42% grade slope.

Only Campground Area 8 records no above-ground or surface features. The distinguishing characteristic of this site is the absence of surface stone on the level plateau and its location adjoining the north side of the Mortar Battery.

Numerous campground features defy explanation of purpose or use. For example, in Campground Area 2 (on plateau west of crest and south of Exterior Fort), Feature CA2-F49 is described as "a rounded stone pile about eight feet in diameter . . . mounded towards the center, [and standing] only about two feet high." Features CA2-50 through CA2-52 have similar descriptions. These sites certainly did not function as foundations. Perhaps they simply became mounds of stone piled high by soldiers removing rocks from their encampment.

Another curious feature which appears in Campground Area 2 is CA2-F19--"a small circular depression about four feet in diameter and one foot deep." Five other similar depressions also appear in Campground Area 2. Too small and the wrong shape for tent platforms, their purpose remains a question.

The Maryland Heights research project represents the first systematic archeological recording of Civil War campgrounds within the National Park system. The techniques and results of this study will serve as a model and provide a guide to future efforts in Civil War archeology.

CHAPTER VII
DOMESTIC SETTLEMENT

Following the bankruptcy of the Antietam Iron Works in the 1840s, its large holdings were divided into approximately 250 lots and individually sold. Thirty lots, or portions of them, presently fall within the National Park Service boundary on Maryland Heights. These lots vary greatly in size, from roughly one to 107 acres, but average 20 to 25 acres. Most of the lots are narrow and extend from either the east or west base of the mountain to the crest (Figure 7.1).

Domestic settlement on Maryland Heights began shortly after the lots were acquired by private individuals. Small homesteads continued to be constructed around the base of Maryland Heights into the first decades of the twentieth century. In this chapter, attention focuses on these numerous settlements. The first section provides a brief historical background study for each of the lots. Following the historical overview are physical descriptions of each of the sites recorded during fieldwork. An interpretive section combines the historical sources and fieldwork results to determine dates of occupation and identify individual features. Completing the chapter is a summary and conclusion section that places the sites in historical and social context.

HISTORICAL BACKGROUND

When John McPherson Brien regained control of the Antietam Iron Works in 1848, he received permission to sell portions of its large holdings before he had finished paying for them.[1] Brien quickly subdivided 13,000 acres into approximately 250 lots and began selling those most distant from the Iron Works, including the 30 lots that comprise Maryland Heights within the National Park Service boundary. All of these tracts were auctioned in September and December of 1848, with most finding buyers.[2] From that point, the south end of Elk Ridge entered a new phase of historical development with the advent of a number of small domestic settlements nestled around the base of the mountain.

In this section, the histories of the individual lots are documented. The descriptions begin with Lot I in the northeast corner of Maryland Heights and move southward down the east flank, around the base of the mountain, and northward along the west flank. Two small tracts that apparently belonged originally to the C & O Canal Company, but now lie within the park boundary, are discussed at the end of this section. The lot designations used here are the original names given in the Antietam Iron Works Ledger Book, presently located in the Washington County courthouse.

A variety of sources were reviewed as part of this historical background study. Foremost were records located at the Washington County courthouse in Hagerstown, Maryland. Deed searches of all the lots were conducted to establish ownership. Once individual owners had been documented, tax assessment and census records were consulted to uncover detailed social and economic information about the owners and their properties. At the Washington County Historical Society, a large collection of letters concerning the acquisition of Maryland Heights by the State of Maryland in the 1950s and 60s were discovered. This collection provided valuable insights into the later history and development of the mountain. Finally, correspondence and discussions with descendents of property owners added a necessary human element to the story and filled gaps in the public records.

Lot I

Edward and Christian Stonebraker, members of a prominent family in Pleasant Valley, purchased several lots, including Lot I (33 acres, 3 perches), at public sale in 1848 for $589.38. Lot I remained in the Stonebraker family until 1920, when it was sold to William J. Coulter, along with a number of other Stonebraker properties, for $19,000. The tract returned to the Stonebrakers in 1928, however, when Coulter could not meet mortgage payments to its former owner, Nettie G. Stonebraker. The same day the reconveyance was made from Coulter to Stonebraker, the latter sold a one-third interest in the properties to a relation, Elizabeth F. Stonebraker Hedges, and Hedges' husband. Shortly thereafter, Nettie G. Stonebraker conveyed her remaining interest in the properties to them as well.[3]

The State of Maryland acquired Lot I in 1962 for $500, following condemnation proceedings against the heirs of the Stonebraker family. An appraisal made of Lot I that same year stated that "there is some good timber on this tract, and the balance is underbrush." There were no improvements listed.[4] In fact, throughout its history, Lot I was described as "mountain land" and apparently served only as a wood lot for the Stonebrakers.

Lot J

Lot J (23 acres, 18 perches) originally was sold at public sale to John Miller in 1848. Miller apparently did not complete the transaction, for the land was auctioned again in 1854, this time to Peter Miller. Peter Miller died the following year, but his estate was not settled until 1860; at that time Lot J was conveyed to John Hefflebower for $204.96. Hefflebower retained possession of Lot J until his death in 1903. His executor sold the tract to James Smith that same year.[5]

Smith divided Lot J into two halves. The north half (about 12 acres) remained in the Smith family until sold to the State of Maryland in 1956. The south half (11 acres, 8 perches) was purchased by Charles E. Virts in 1904 for $68.50. Charles F. Virts sold this property to the State in 1954.[6]

In 1893, John Hefflebower had sold one acre of Lot J for $22.50 to Marshall King. King, a former slave of James Elgin, had been living on Lot J since the end of the Civil War. His first house, a log structure, was constructed in 1866 according to the present owner of the property, Harold T. King. It was replaced about 20 years later by a second log dwelling, perhaps when King obtained title to the land. An 1896 tax assessment listed Marshall King as owning a house and lot valued at $25, and furniture worth $10.[7]

King sold his one-acre lot to Everett W. Himes in 1896 for $15.00. In 1904, Himes conveyed the land for $25 to William King, Marshall's son. In that same year, William erected a third log structure on the lot, about 10 to 15 ft northeast of the second one. This house was constructed by John Fenton Norris and Will Norris, carpenters who lived on neighboring Lot K. The older second house was torn down in 1918.[8]

In 1910 the house and lot were assessed at $100, with furniture worth $25, and livestock valued at $25. In the population census taken that year William King was listed as 36 years old, with a wife named Bessie who was ten years younger. King was described as a laborer at odd jobs. According to his son, Harold T. King, William worked and travelled with Ringling Brothers Circus and was killed in an accident in 1921. Bessie continued living on Lot J until 1943, when she moved to Hagerstown (Figure 7.2).[9]

Thomas H. Easton, a carpenter, lived in the house on Lot J until 1946. By that time the assessed value of the property had fallen to $50 for the dwelling and $10 for the lot. The house was abandoned after Easton moved out.[10] Title to the property remained in the King family; presently it is owned by Harold T. King of Louisville, Kentucky (Figure 7.3).

Lot K

Jonathan Meredith and John Spear Nicholas, trustees for the Antietam Iron Works holdings, conveyed Lot K (22 acres, 1 rood, 20 perches) to Edward Evans and John A. Norris in 1850. Evans and Norris subsequently divided the tract into two halves, for in 1855 Evans sold the south half of Lot K to Norris for $1 and additional, unspecified considerations.[11]

According to family tradition, John Ault Norris was living on Lot K by 1852, the year in which his eldest son, John Fenton Norris, was born. Late in life, John Fenton recollected walking up to the Stone Fort as a boy during the Civil War, and taking the leftover rations of the soldiers to bring back to his family for food.[12]

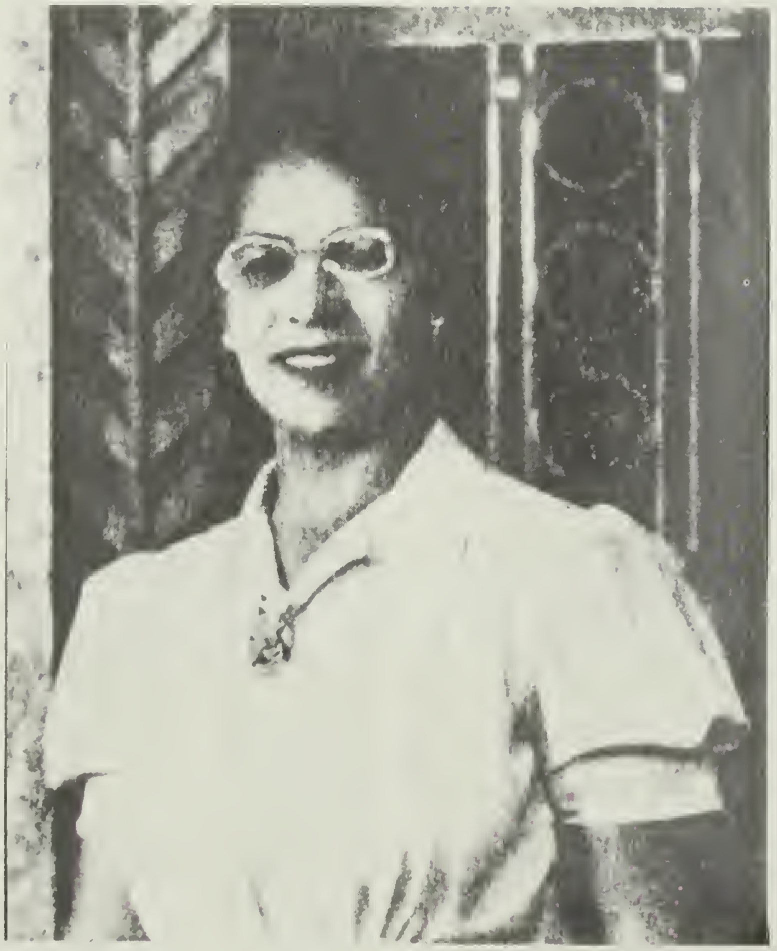


Figure 7.2 Bessie King in 1928. (Harold T. King)

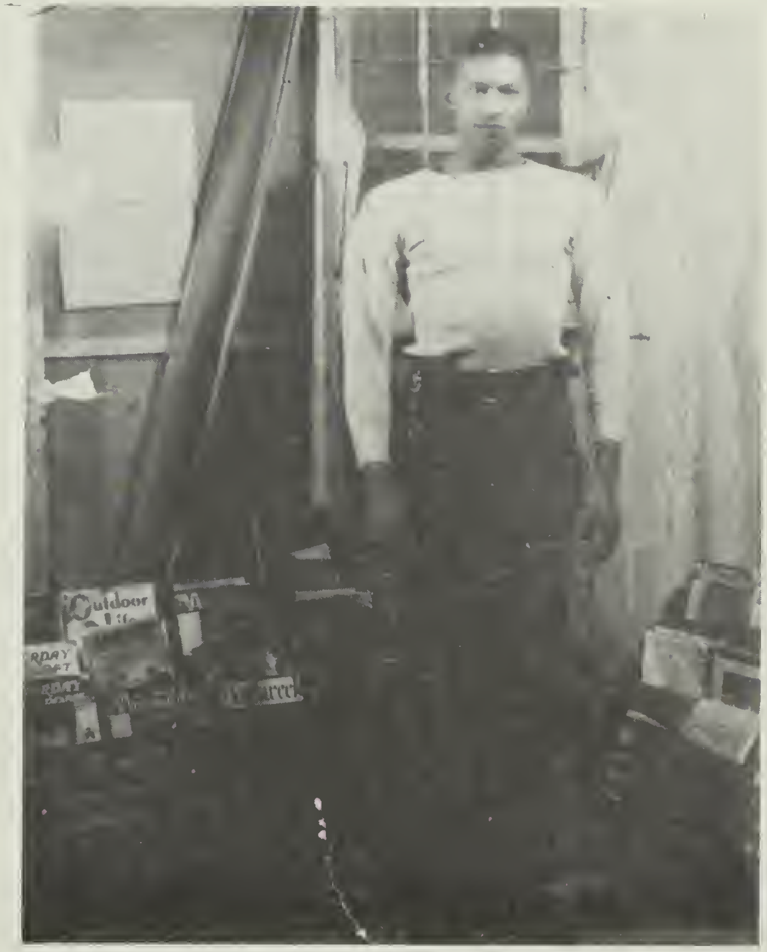

Outdoor Life

Figure 7.3 Harold T. King at age 21 in 1937. (Harold T. King)

The Norris family continued living on Lot K after the Civil War. In an 1877 Atlas of Washington County, Maryland, D. Norris lived on the north half of the property, and a Mrs. Norris resided in the south half (Figure 7.4). Daniel Norris was a son of John Ault Norris and a stonemason by occupation. He married Sarah Easton, a daughter of the Barbara Easton who moved to Lot N in the 1890s. The Mrs. Norris living in the south half was Elizabeth, the widow of John Ault.[13]

In the 1870 population census, Elizabeth's daughter Ellen and Ellen's husband Henry Scott shared the house with her, along with her sons John Fenton and William Ault. John Fenton, aged 19 years at that time, worked as a repair hand on the railroad. Ten years later, the census listed John Fenton Norris as a carpenter by trade. He still resided with his mother, along with his wife Virginia (Genie) and younger brother William Ault Norris, also a carpenter.[14]

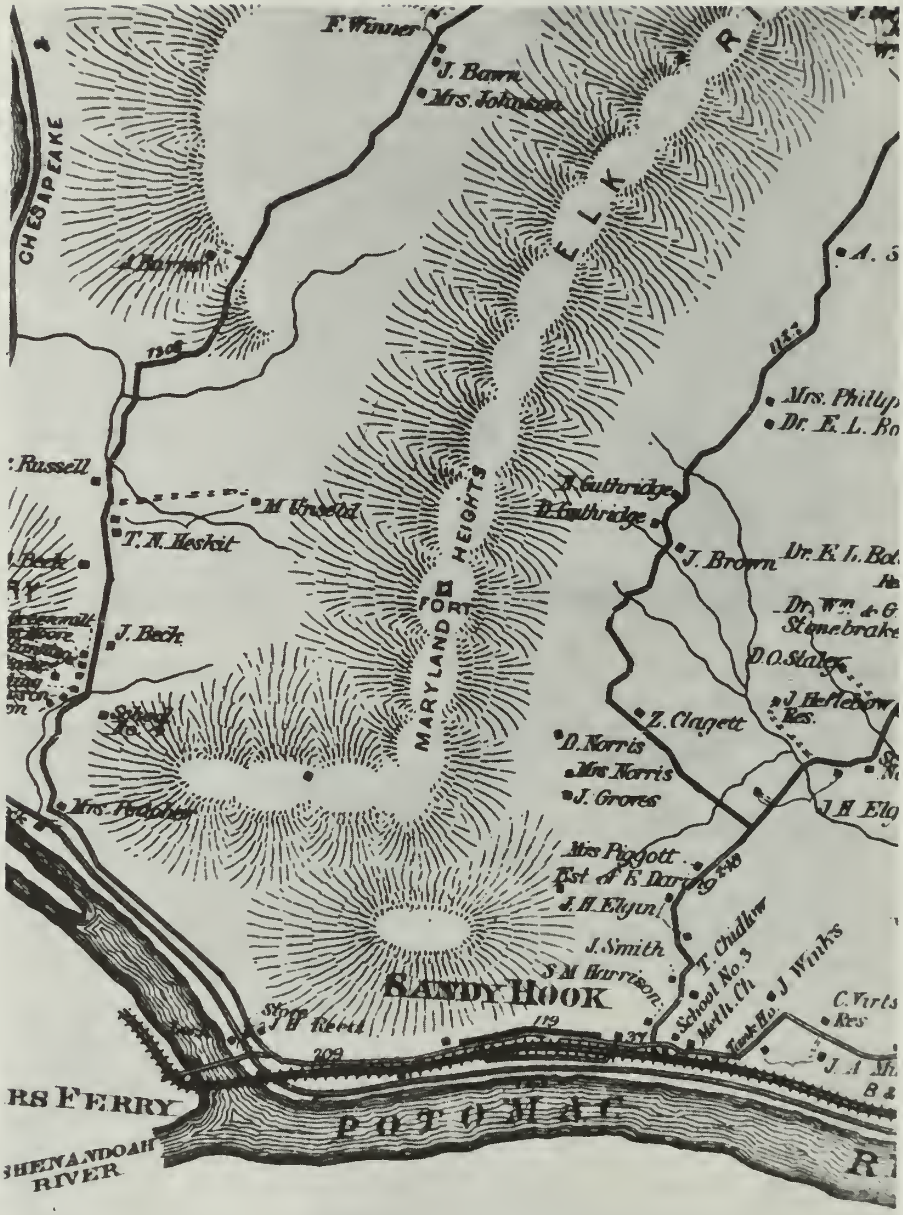
John Fenton and William Ault apparently continued to share the house with Elizabeth Norris, as all three paid taxes on the property. Upon her death in 1900, Elizabeth bequeathed her "house and lands upon which I now reside (the lands being about eleven acres)" to her son John Fenton. Interestingly, she willed only one dollar each to her other sons Thomas, William, and Daniel.[15]

In 1880, John Fenton's brothers and sisters began conveying their interest in the remainder of Lot K to him in an unrecorded quit claim (Figure 7.5). Even so, his brother Daniel continued living on the north half of Lot K into the 1890s. Sometime around the turn of the century, William Ault Norris moved into the house.[16]

Around 1904, Norris built a second, larger house on the south half of Lot K about 15 ft east of the older building. The greater value of the new house was reflected in a 1910 tax assessment, in which the lot and house were appraised at $225, compared to $144 in 1896. The Norrises lived in this new house until shortly before the death of Genie in 1925, when they moved to their daughter's house in Sandy Hook (Figure 7.6). John Fenton died there in 1931.[17]

After John Fenton and Genie Norris moved from Lot K, their house was occupied for a short period by Garland Harrison. Following his tenancy, the house was never inhabited again and allowed to fall down.[18]

Occupancy of the house in the north half of the lot continued into the first decades of the twentieth century as well. After William died in 1910, his widow Myrtle and their two sons resided on Lot K until she married Everett Himes and moved to Williamsport. From that point the house was vacant and allowed to deteriorate. According to Ruth Norris McGolerick, a granddaughter of John Fenton Norris, a house ruin on the north half of Lot K was always referred to as "the old house" when she visited there as a child in the early 1920s.[19]


F. Winner
J. Barn
Mrs. Johnson
CHESAPEAKE
ELK
J. Barnes
Russell
M Unseld
T. N. Heskit
J. Beck
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MARYLAND HEIGHTS
FORT
School No. 4
Mrs. Phillip
Dr. E. L. Bo
A. Guthridge
D. Guthridge
J. Brown
Dr. E. L. Bot
Dr. Wm. & G.
Stonebrake
D. O. Staley
J. Hefleborer Res.
Z. Clagett
D. Norris
Mrs. Norris
J. Groves
J. H. Elg
Mrs Piggott
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J. H. Elgin
J. Smith
S M Harrison
T. Chidlaw
School No. 3
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C. Virts Res
J. A. Mi
SANDY HOOK
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J H Reed
RS FERRY
SHENANDOAH RIVER
POTOMAC
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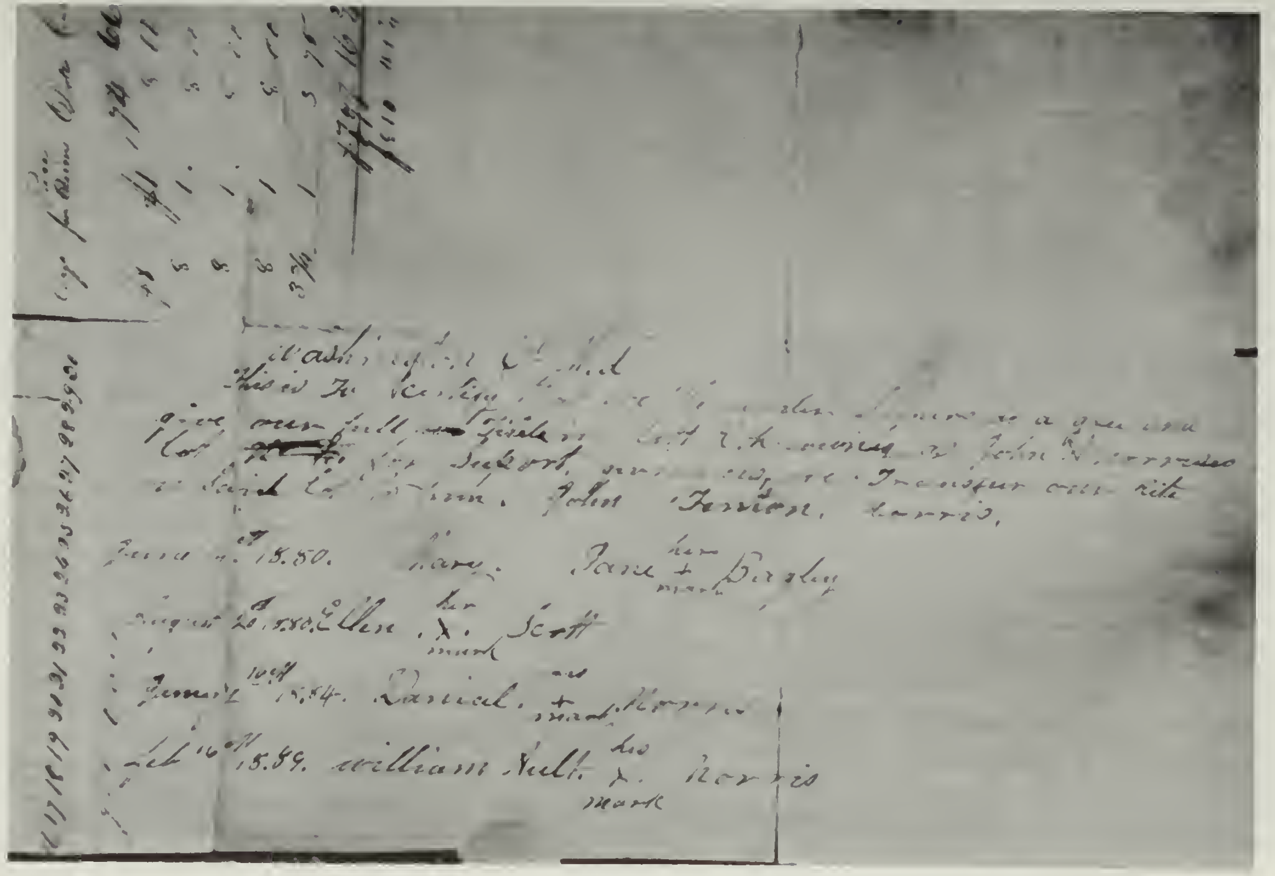
Figure 7.4 Detail of Sandy Hook District in 1877. (From 1877 Atlas of Washington County)



Washington [illegible]

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give our full [illegible] John N. Norris [illegible]

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[illegible] John Jenison Norris,

June 4th 1850. Mary. Jane her + mark Burley

August 20 1880 Ellen her X mark Scott

June 10th 1884. Daniel + mark Norris

Feb 16th 1889. William Nult his X mark Norris

Figure 7.5 Norris family quit claim. (Everett and Frances Norris)

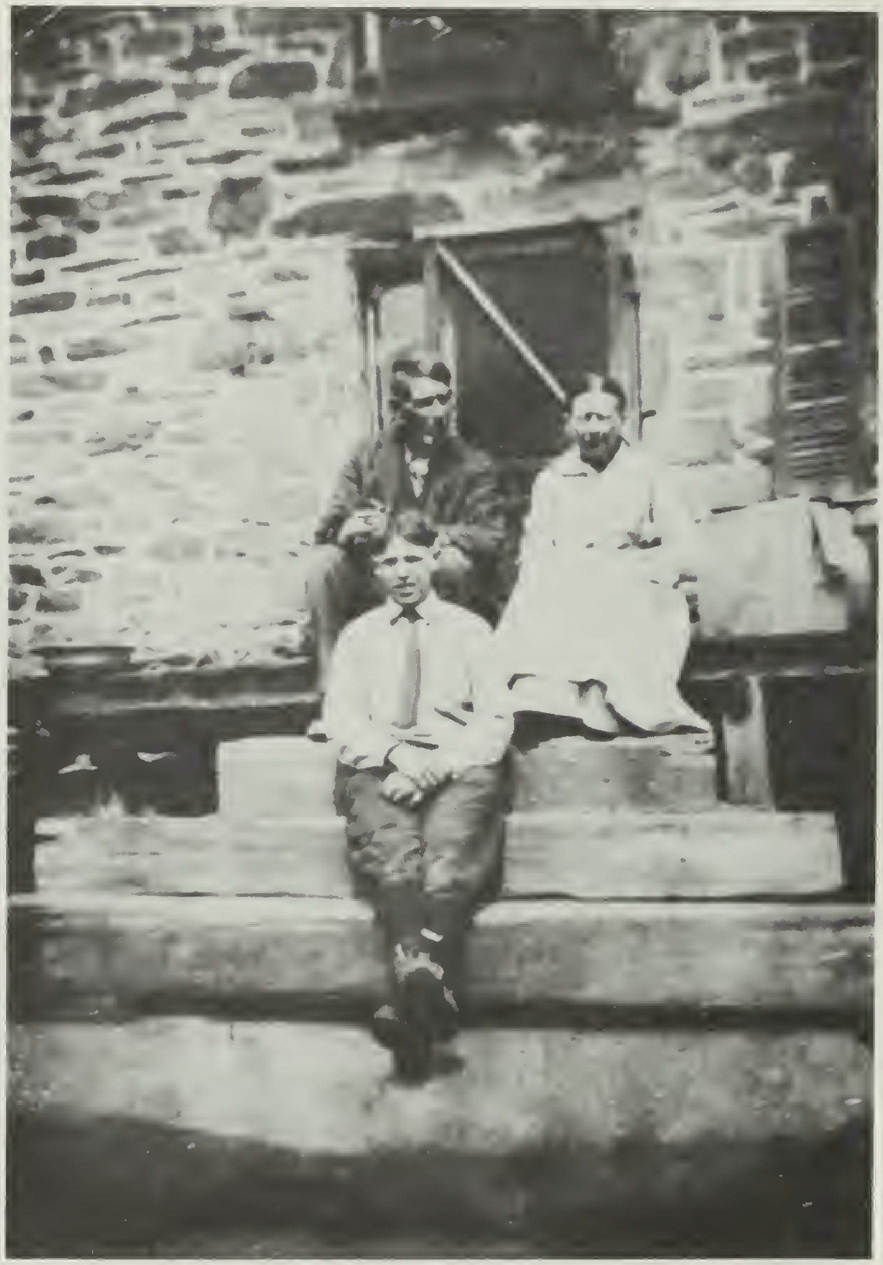


Figure 7.6 John Fenton and Virginia Norris, c. 1923, with a grandson. The stone house stands on the west side of Valley Road, a short distance above Miller Ave. (John E. and Frances Norris)

Subsequent to its abandonment, John Fenton Norris began paying taxes on the north half of the lot, as a 1928 tax assessment showed him as the owner of all 22 acres of Lot K. In this assessment, the house in the south half was listed with an original value of $250, but this amount was crossed out and "$25" penciled in its place, reflecting the dilapidated condition of the property by that date. By 1941, no buildings remained on Lot K.[20]

Lot L

James H. Elgin, a prominent land owner in Pleasant Valley, purchased Lot L (24 acres, 1 rood, 37 perches) and Lot M for $287.66 at public sale in 1848 (Figure 7.7). Elgin filed a claim after the Civil War for damage inflicted by Federal troops on his properties. In this claim he stated that "[S]ome lumber was taken . . . from a dwelling house about 1/2 mile from the [Stone] fort on Maryland Heights--& used by Union soldiers to build cabins. Said dwelling was torn down and all the lumber was used, the house was built of stone & worth $400."[21] It is likely that this house stood along the base of the east flank of Maryland Heights, within either Lot L or Lot M.

In addition, local tradition states that the base of Lot L was used as a staging area for wagon traffic during the War. The main road up the east side of the mountain (mapped as Road H) began near the east end of the lot and extended to the fortifications on the crest. The east end of the tract apparently was cleared meadow.[22]

Following Elgin's death in 1899, his lands were offered for public sale. Lot L contained no improvements at this time and was described, together with Lot M, as

> a tract of Mountain land situated on the east side of Maryland Heights [which] contains fifty acres more or less. About half of this tract is well wooded with a thrifty growth of chestnut timber of thirty six years standing, the other half and upper portion is wooded with oak and hickory.[23]

Johanna Suckern purchased several of the Elgin tracts, including Lot L, for $5,935.60.[24]

The 1900 census listed Johanna Suckern as a widow, 60 years old, who was born in Germany and emigrated to the United States in 1852. She retained possession of Lot L for only a short period, selling the eastern-most four acres to Catherine Wasserbach in 1902, and the remaining part to her in 1904. In 1934, Wasserbach established joint tenancy rights on the property with her daughter, Alice W. Darton.[25]

Catherine Wasserbach and the Dartons lived in the Washington, D.C., area, spending only their summers on Lot L. Two cottages, one known as the tin

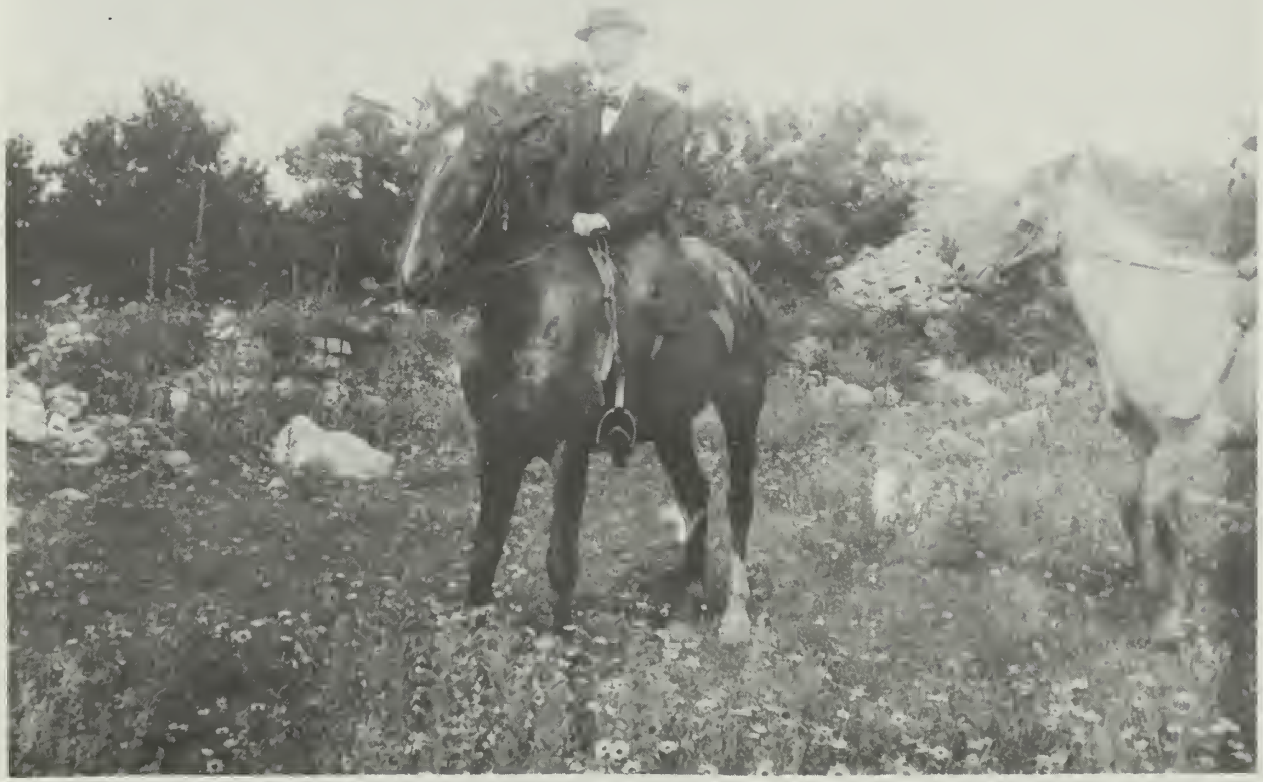


Figure 7.7 Photograph of James H. Elgin at the Stone Fort in 1891. The direction and placement are unknown, but note the high wall ruin to the right of Elgin. (Collection of Maryland Historical Society, Baltimore)

house and the other as the bark house, were built on the property sometime after 1910 and before 1928. The tin house, which had metal sheathing on the exterior, provided the main sleeping quarters and was located next to Lot K. The bark house, so called because the bark had been left on the logs of which it was built, lay farther to the south. By 1957 these summer cottages had been destroyed by vandals, as the Dartons had ceased visiting the property yearly.[26]

Alice W. Darton sold Lot L, with the exception of the eastern-most 300 ft, to the State of Maryland in 1957. The reserved parcel she conveyed to her grandsons, Arthur B. Darton, Jr. and David Darton Kerlin, in 1964. In 1986 Darton and Kerlin sold the tract to Joseph and Cynthia Kellinger, who since have constructed a new house on the land.[27]

Lot M

James H. Elgin purchased Lot L and Lot M (23 acres, 25 perches) at public sale in 1848. The two lots shared the same history until 1901, when Joseph T. Elgin acquired a number of tracts, including Lot M, for $2,500 at the estate sale of James H. Elgin's properties. Joseph owned these lands for little more than a year, conveying them in 1902 to Isaac L. Gordon.[28]

Gordon split Lot M in two halves, selling the north half (11 1/2 acres) to Anna Marie Elgin and Jennie Anna Gittings in 1907. Jennie Anna and Edward Gittings sold this property to Catherine Wasserbach in 1922, with no mention made in the deed of Elgin's half interest.[29]

In 1920, Isaac Gordon sold the south half of Lot M (11 1/2 acres) and several other properties to A. and Minnie Primozich. The Primoziches mortgaged their new lands to Gordon for $3,000. They defaulted on the mortgage in 1929, forcing a public sale of their property. Charles West purchased the south half of the lot for $74.75, and then conveyed it to Everett E. and Lucy M. Norris for $85 less than two months later.[30]

Everett and Lucy Norris retained possession of the land until 1935, at which time they sold it to Catherine Wasserbach and Alice W. Darton for $50, thus reuniting the two halves of Lot M under single ownership. In 1957, Alice Darton conveyed the entire lot to the State of Maryland.[31]

Lot N

Mary A. Moore purchased Lot N (23 acres, 1 rood, 35 perches) at public sale in 1848 for $168.80. In 1864, she sold the tract to Jeremiah Jesse Moore for $100. Moore owned Lot N for a number of years, but in 1871 he detached a small, 1 1/2-acre plot in the extreme southeast corner from the main tract and sold it to Jacob W. Grove for $65. This is the last recorded transaction involving this small parcel until it was sold recently for nonpayment of taxes.[32]

Moore conveyed Lot N to Edwin E. Carpenter of Beliot, Iowa, for $350 in 1877. One month later, Carpenter sold the north side of the tract (11.3 acres), including the right to use the spring running through the property, to Samuel H. Reeser. In 1890, Eliza J. Powers purchased one acre along the east end of Lot N from Reeser for $30.[33]

For $150 Powers conveyed this small, one-acre tract in 1895 to Barbara C. Easton, listed in the 1900 census as a 51-year old widow with three children. The substantially higher price suggests that a house was constructed on the lot between 1890 and its sale to Easton. In 1896 the lot and new house were valued at $140. Easton continued to live on this tract at least until 1910. The census for that year listed two of her sons, William and Thomas H., as single and still living at home, although 31 and 28 years old, respectively.[34]

No further transactions are recorded concerning the Easton property, and in the present tax records the owner is listed as unknown. According to title work done by the State of Maryland while acquiring the properties on Maryland Heights, the last known owner of the one-acre tract was Roy Easton in 1913. The State did not attempt to acquire this parcel because it was perceived that the expense of condemnation proceedings would have exceeded the value of the land.[35]

Edwin Carpenter retained possession of the south part of Lot N (14 acres, 2 roods and 27 perches, excluding the Grove parcel) until he defaulted on a mortgage in 1893. At that time the tract was sold to Samuel H. Reeser, owner of the north section, for $65. While under his ownership, Reeser sold approximately three acres of the west end of Lot N, along the crest of the mountain, to Charles F. Thomas of Frederick County, Maryland, in 1895. The following year, Thomas conveyed the same land to Daniel Baker, along with a number of other tracts he had acquired on the mountain. This three-acre tract remained in the Baker family until sold to the State of Maryland in 1954.[36]

The reunited sections of Lot N remained in the Reeser family until 1930. In that year the widow of Samuel W. Reeser (son of Samuel H.) sold what was left of the north side (8 1/2 acres) to Louis M. and Bertha Hoffman for $145. The Hoffman's conveyed this tract to the State in 1959. The south half was sold to the State by heirs of the Reeser family in 1956.[37]

Lot O

Jonathan Meredith and John Spear Nicholas, trustees for the Antietam Iron Works, conveyed Lot O (20 acres, 1 rood and 15 perches) to Oliver Jacobs in 1850. Jacobs sold Lot O, along with a number of other properties, to Jacob D. Eavey in 1863. The following year, Jacob A. Miller purchased the lands from Eavey. In 1873, Miller conveyed the properties to William H. Pigott. Pigott's widow, Isabella, sold several tracts, including Lot O, to Edwin E. Carpenter in 1877.[38]

Three days after acquiring Lot O, Carpenter sold the west 13 3/4 acres of the tract to Silas Himes. This conveyance included a right-of-way on a public road that ran through the J. Moore parcel (Lot N). Silas Himes died intestate in 1908, necessitating an equity case to settle his estate. At that time his section of Lot O was described as unimproved, although an appraisal done in 1947 listed a building worth $1,300 on the property. The land remained in the Himes family until purchased for $140 by the State of Maryland in 1959.[39]

Carpenter retained the easternmost 6 3/4 acres of Lot O, including them in an 1877 mortgage for $2,000. Carpenter subsequently defaulted on this mortgage, forcing a public sale of his lands in 1895. Nicholas Powers purchased the east section of Lot O, described as a mountain lot, for $52. He in turn conveyed the easternmost three acres of this parcel to Frank Powers for $30 two months later. This three-acre tract apparently remained in the Powers family until sold recently for nonpayment of taxes.[40]

Fannie E. Powers, the widow of Nicholas, conveyed the remaining 3 3/4 acres to Thomas H. Easton in 1913 for $30. In 1952 Easton sold this tract to Bessie Ann King, the widow of William King and owner of the King property on Lot J, for $10. The State of Maryland subsequently purchased the land from King for $5 and other considerations in 1956.[41]

Lot P

Thomas Boteler, a prominent land owner in Pleasant Valley, purchased several Iron Works lots, including Lot P (22 acres, 2 roods, 6 perches), from Meredith and Nicholas in 1850. No further transactions involving Lot P are recorded until 1913, at which time Richard E. and Harriett Johnson conveyed Lot P to their son, Roy E. Johnson of Brunswick. According to this deed, Richard's mother, Sarah A. (Williams) Johnson, had owned Lot P for 20 years before dying intestate, with Richard as her only heir. Richard had paid taxes "for some years" and wished to sell; no mention was made of any improvements, nor of any connection to Boteler.[42]

A patent filed by Mary E. Clark in 1912 further complicated the ownership of Lot P. In this document she claimed Lot P as vacant land, adding it to land she owned on the east side of the road (Lot U). No further documentation concerning her claim was found, however, and the property, at least according to the land records, remained under the ownership of the Johnson family.[43]

In 1944, Roy and Nellie Johnson sold Lot P to Mabel Viola Kenney of Harpers Ferry. According to the deed, improvements existed on the property. A tax assessment for 1928 listed R. E. Johnson as owning 34 acres of land, a lot in Sandy Hook, and buildings. Unfortunately, it did not specify on which tract or tracts those buildings were located.[44]

Lot P passed out of Kenney's hands in 1946 when she sold it to Paul Aubrey Coleman and Luther Robert Coleman. The Colemans reconveyed the property to Kinney in 1948. James C. Penwell purchased the lot from her in 1951. Lot P remained in Penwell's possession until 1958, when he sold it to the State of Maryland.[45]

Lot Q

Elias Dearing purchased Lot Q (24 1/4 acres) for $48.64 at public sale in 1848. In 1852, he and his wife Lucinda conveyed the property to their nephew, George T. Dearing, for $400. Three years later, George sold Lot Q back to Lucinda Dearing for $500. She apparently retained possession until her death sometime before 1869, as an 1877 Atlas of Washington County showed a house at the location of Lot Q with the label "Estate of L. Dearing" (Figure 7.4).[46]

Lot Q was sold at public sale in 1896 for nonpayment of taxes by the Dearing estate between the years 1892-94. Patrick Higgins, best known as the railroad watchman captured on the night of the John Brown raid in October, 1859, purchased the entire lot for $90. In 1899 Higgins divided two one-half-acre parcels from the main lot and sold them for $5 apiece, one to his son-in-law John W. Nelson, and the other to his daughter Mary L. Currey. Both tracts were located in the extreme southeast corner of Lot Q. No further record of these properties was found in the land records; they are listed as "owner unknown" in current tax records and are not included within the present National Park Service boundary.[47]

Although he resided in Sandy Hook, Patrick Higgins owned Lot Q until his death in 1915. In both the 1896 and 1910 tax assessments, Higgins was shown as possessing four separate lots, with houses on each one, but it is not known whether or not Lot Q is included under one or more of these. According to his will, Higgins desired that all his properties be sold and the proceeds divided amongst his heirs. For some unknown reason, Lot Q was not sold, but remained part of the Patrick Higgins estate until acquired by the State of Maryland in 1961.[48]

A tax assessment recorded for 1922 listed two entries under the heirs of Patrick Higgins. The first was for a lot and dwelling with combined value of $340. The second listed a lot initially worth $45 but changed to $20, and a dwelling valued at $544 that had been totally crossed off. This second entry also included a farm assessed at $578. By 1928, all that remained under Higgins' name was a lot with buildings in Sandy Hook and a lot in Weverton. There were no entries for Patrick Higgins in 1941. When the State acquired Lot Q, it contained no improvements.[49]

Lot R

Nicholas Marmion, an eminent doctor in Harpers Ferry, purchased Lot R (28 acres, 3 perches) and Lot 154 at public sale in 1848 for $140.54. The lot remained in the Marmion family until sold to the State of Maryland in 1961, following condemnation proceedings against numerous Marmion heirs. At that time there were no improvements on the property.[50]

Lot S

Edward Stonebraker and Christian Stonebraker purchased Lot S (63 acres, 2 roods, 28 perches), along with two other lots (I and Z), at public sale in 1848. In 1853 they sold Lot S to Robert Clauge for $350.21. Three years later, Clauge conveyed the property to Gertrude Clauge for the same amount of money. Gertrude Clauge owned the lot for a number of years, finally selling it to Sarah E. Chidlow in 1874 for $204. Five years later, Chidlow sold Lot S for a much higher price-- $900--to the ever-present Edwin E. Carpenter.[51]

When Carpenter defaulted on a mortgage he had made in 1877 on his properties on Maryland Heights and elsewhere, Elmer E. Barnhouse purchased Lot S at public sale in 1895 for $26. At that time Lot S was described as "a tract of mountain land lying west of and near Sandy Hook." Less than one year later, Barnhouse sold the tract to Charles F. Thomas for $300, making better than a 100% profit on the transaction.[52]

According to an 1896 tax assessment, Thomas, who lived in Buckeystown, Maryland, owned 119 1/2 acres of land valued at $1,434 and improvements worth $450. That same year he sold several tracts, including Lot S, to Daniel Baker, also of Frederick County, for $742.50. In a 1910 tax assessment, Baker was listed as owning 120 1/4 acres worth $601, with no mention made of any improvements. This held true in assessments for 1928 and 1941, as well. The State of Maryland purchased Lot S in 1954 from David B. and Catherine R. Baker.[53]

Lot T

Augustin A. Biggs purchased Lot T, known as the Pinnacle Lot, for $200 in 1864. This property, the largest within the Maryland Heights boundary, contained 107 acres clear of C & O Canal claims along its south and west edges. In 1866, Biggs, along with Lewis Watson, sold Lot T to Patrick C. Savin, a superintendent on the C & O Canal, for $300. Savin resided in Sandy Hook at that time, although he died in Hartford County, Maryland, in 1889. Although Savin's indebtedness forced the sale of all his properties following his death, Lot T remained in the Savin family until purchased by the State of Maryland in 1962.[54]

During his lifetime, Savin leased the mineral rights to Lot T to John W. Van Hook, Barnet Vanfleet, and William Medlar for a period of 20 years. Payment to Savin was to be one-quarter of all minerals from the daily take.[55] It is not known from historical documentation whether the lessees ever actually mined any of the tract.

Tax assessment records for Washington County dating from 1896 and later consistently showed the Savin heirs as owning 107 acres of unimproved mountain land. An appraisement of the tract prior to its purchase by the State revealed that it still contained no improvements. In addition, access to Lot T was difficult: "the property has no access roads to it except from way up around Yarrowsburg. It is true it borders the public highway, but it is impossible to get to the main part except over other property."[56]

Lots 139, 140 and 141

Thomas Boteler purchased the contiguous Lots 139, 140, and 141 in 1855 for $28.35. These lands were placed in trust about six months later to cover outstanding debts, and subsequently conveyed early in 1856 to Jacob A. Miller for about $55. When Miller died in the 1890s, the lots were sold to Everett Himes for $13.63.[57] At that time, the lots were described as containing

> about 7 1/2 acres of Mountain land situate at the base of Maryland Heights and directly on the road leading from Harpers Ferry Bridge to Sharpsburg and 1/2 mile from the Bridge. This land has wood and rail timber upon it, as also rock suitable for curbing and paving which is of easy access.[58]

Everett Himes died in October 1930, bequeathing all his property to his wife Myrtle (widow of Will Norris from Lot K) and his son Charles E. Himes. The lots remained in the Himes family until purchased by the State of Maryland in 1962.[59]

Lot 142

Augustin A. Biggs and Lewis Watson purchased a large number of tracts, including Lot 142 (3 acres, 3 roods, 35 perches), in 1854. No further connection between Biggs and Watson and Lot 142, however, has been uncovered in the Land Records. The next transaction involving the lot was found in the will of John H. Reed, a prominent resident of the Sandy Hook District. Reed, who died in 1889, bequeathed his property to his son, Winfield S. Reed.[60]

Winfield Reed did not maintain possession of Lot 142 for very long. By 1892 he had become indebted to Albertus Spencer for $274.63. Spencer obtained a judgment against Reed for the money, which he was not able to pay. Reed's two properties then were conveyed to Spencer in exchange for the money owed to him.[61]

Spencer sold Lot 142 to his nephew, Edgar Spencer Weaver, in 1924. In 1930 Weaver constructed a house on the lot, just above Harpers Ferry Road. This house was quite substantial, consisting of a two-story concrete and frame building with 10 rooms, bath, shower, and steam heat. It was constructed in the bungalow style popular during that period (Figure 7.8). Also connected with the property was a large garage with an apartment on the second floor (Figure 7.9). In 1956, Lyle M. and Kathryn Grove were renting that apartment.[62]

The State of Maryland purchased the house and lot from Hester G. Weaver, widow of Edgar Spencer Weaver, and E. Marion and Marjorie G. Weaver in 1957. Marion Weaver continued to live in the house, however, until at least September of 1959. The National Park Service demolished the house and garage in the early 1960s.[63]

Lot 143

No record exists of Lot 143 (2 acres, 10 perches) as a separate entity, as it apparently was not purchased during any of the public sales disposing the Antietam Iron Works property. It appears to have been conveyed as part of either Lot 142, Lot 144, or both, and thus belonged to the Spencer/Weaver family throughout the twentieth century.[64]

Lot 144

Josiah and Margaret Haines sold Lot 144 (2 acres) for $13.30 to Michael Doran in 1851, shortly after acquiring it from Meredith and Nicholas. In 1854 Doran conveyed Lot 144, along with adjoining Lots 145 and 146, to Thomas D. Hammond for $500. The following year, Samuel Kilham, an armory worker in Harpers Ferry, purchased the tracts from Hammond for the same price.[65]

Lot 144 remained in Kilham's possession until his death in 1863. At that time the tract was sold at public auction to his son, John T. Kilham. The lot passed down in turn to John T. Kilham's son, John D. Kilham. In 1930, Edgar Spencer Weaver, owner of the adjoining tract to the south, purchased the tract at public sale. The Weaver family retained possession of Lot 144 until they sold it to the State of Maryland in 1957.[66]

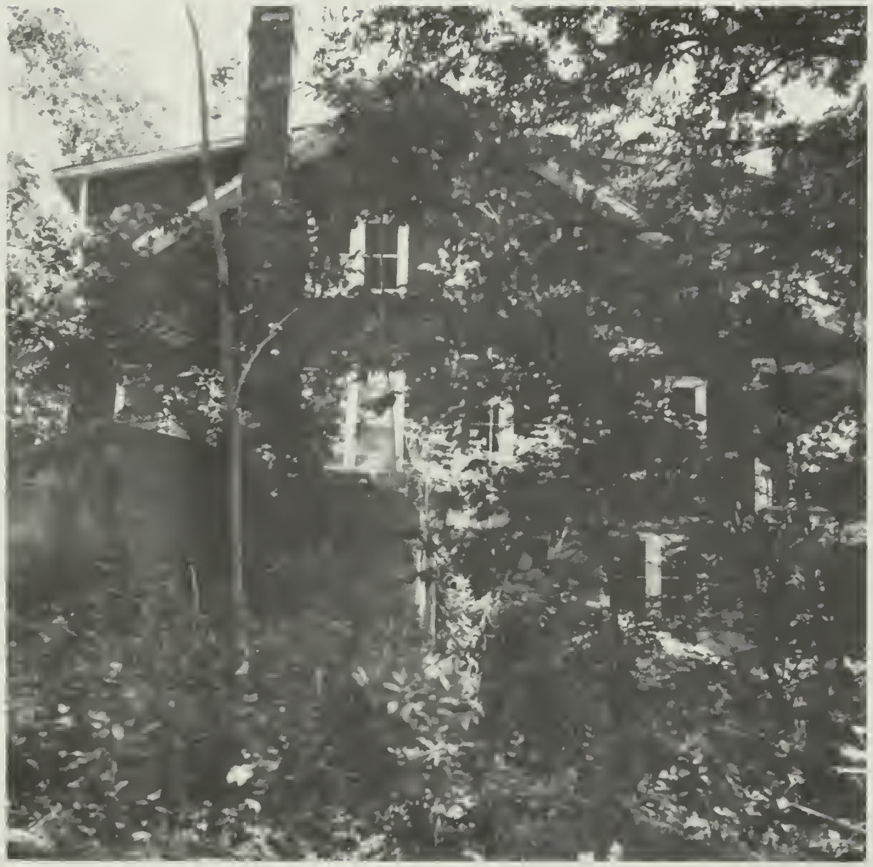


Figure 7.8 West elevation of Weaver House on Lot 142.(Harpers Ferry NHP)

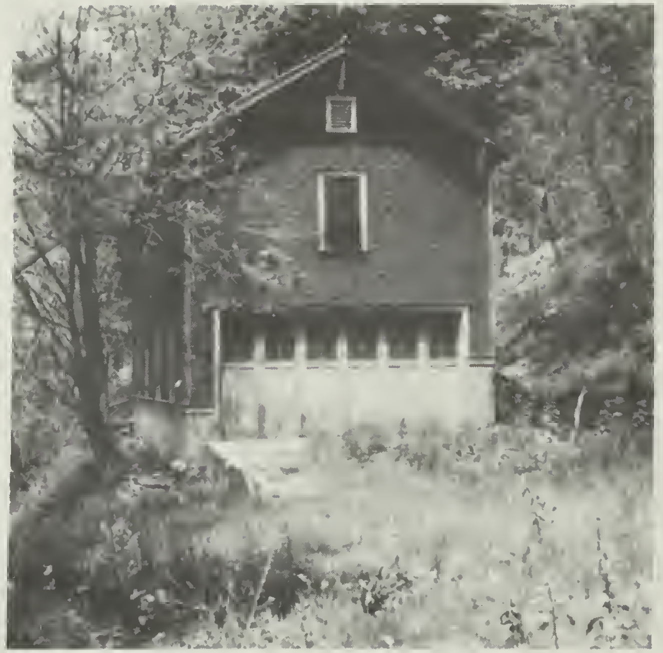


Figure 7.9 Weaver Garage on Lot 142, looking west. (Harpers Ferry NHP)

Lot 145

Samuel Peacher purchased Lot 145 (5 acres, 2 roods and 22 sq. perches) at public auction in 1848. He sold it to Michael Doran for $39.74 in 1851. In 1854 Doran conveyed the tract, along with Lots 144 and 146, to Thomas D. Hammond for $500. The following year Hammond sold the lots to Samuel Kilham for the same price. When Kilham died in 1863, his son, John T. Kilham, acquired all of his properties.[67]

Lot 145 remained in the Kilham family until sold to the State of Maryland in 1962. Two sections of the tract, however, were conveyed before that time to Lyle W. and Kathryn Grove. The first was a two-acre section along the north end of Lot 145 that also extended into Lot 146, and the second a one acre parcel "lying on the road leading to Sharpsburg."[68] Around 1955 the Groves began building a house on one of these tracts. While constructing the house they lived in an apartment over the garage on the neighboring Weaver property (Figure 7.9). The State bought their two parcels in 1957, and the house was never completed.[69]

Lot 146

Michael Doran purchased Lot 146 (51 acres, 3 roods, 16 perches) from Meredith and Nicholas in 1850 for $518.50. In 1854 Doran conveyed the tract to Thomas D. Hammond for $500. The following year Hammond sold Lot 146 to Samuel Kilham, a gunsmith at the U.S. Armory in Harpers Ferry, for the same price for which he had purchased it.[70]

By the time of the Civil War, Samuel Kilham had carved a small farm out of the tract. In a court case filed to settle Kilham's estate following his death in 1863, the property was described as "improved with a log house in bad repair and some small log outbuildings which do not amount to much, about seven acres all under indifferent fencing and that there is very little timber."[71] John T. Kilham, a son of Samuel's, purchased Lot 146 and several adjacent tracts at public sale in 1869.72

John T. Kilham worked as a railroad conductor with the Baltimore and Ohio Railroad. During his ownership of Lot 146 Kilham constructed a new house on the property. Documentary evidence for this is found in an 1896 tax assessment, which lists improvements under Kilham worth $500--too high an amount for a simple log house when compared with the assessments for the east side of the mountain. Kilham retained possession of the property until 1908, at which time he sold it to his eldest son, James D. Kilham, for $1,500.[73]

The State of Maryland purchased Lot 146 from the heirs of James D. Kilham in 1958 for $8,000.[74] An appraisal from that period provides a detailed description of the property as it appeared when acquired by the State:

> Property consists of approximately 45 acres +/- and improved by a large 2 1/2 story stone dwelling in fair to poor condition. Of the 45 acres +/- most of it is in mountain timber. There is probably 5 acres +/-cleared land in and around the building. The land itself has little or no production value unless considerable time and money were expended. The entire area is fenced.
>
> The improvements as above mentioned being a large stone dwelling without modern conveniences other than electric and water, said water is piped some 750′ from its location on top of mountain. There are other outbuildings namely a chicken house, small combination stable and barn and shed, all in fair to poor condition.
>
> The farm is reached by a long treacherous road bordering the mountain, which in this writer's opinion depreciates the property considerably. The parcel commands a beautiful view of the Potomac and surrounding area.[75]

The house was appraised at $12,000, with a 55% depreciation to $5,400, and the outbuildings were valued at $1,300 (Figure 7.10). This dwelling was torn down shortly after its acquisition by the National Park Service.

Lots 150 and 151

Thomas Peacher purchased Lots 147, 150 (36 acres, 3 roods, 25 perches), and 151 (47 acres, 3 roods, 16 perches) in 1850 for a total price of $496.60. The following year he sold Lots 150 and 151 for $423.78 to Henry Gannon. In 1918, the executor for the estate of Ella E. M. Gannon conveyed the tracts to Howard and Mabel Jones for $205. The heirs of Howard and Mabel Jones in turn sold Lots 150 and 151 to the government in 1957.[76]

In 1895, the heirs of Henry Gannon had sold 20 1/2 acres at the east end of Lots 150 and 151, along the crest, to Charles F. Thomas. This deed included two right-of-ways. Thomas sold this land to Daniel Baker in 1896, along with several other tracts on Maryland Heights, for $742.50. David B. and Catherine R. Baker conveyed the parcel to the State of Maryland in 1954.[77]

Lots 152 and 153

Henry Buckles purchased Lots 149, 152 (45 acres, 3 roods, 13 perches), and 153 (30 acres, 18 perches) for a total price of $2,072.50. In 1852 these lands were sold by the sheriff of Washington County to John C. Unseld for the much lower price of $576. Unseld retained possession of this property until his death in 1880, at which time his lands were offered at public sale. As the highest bidder, William D. Hughes acquired four tracts (including the main farm) for $2,500.[78]

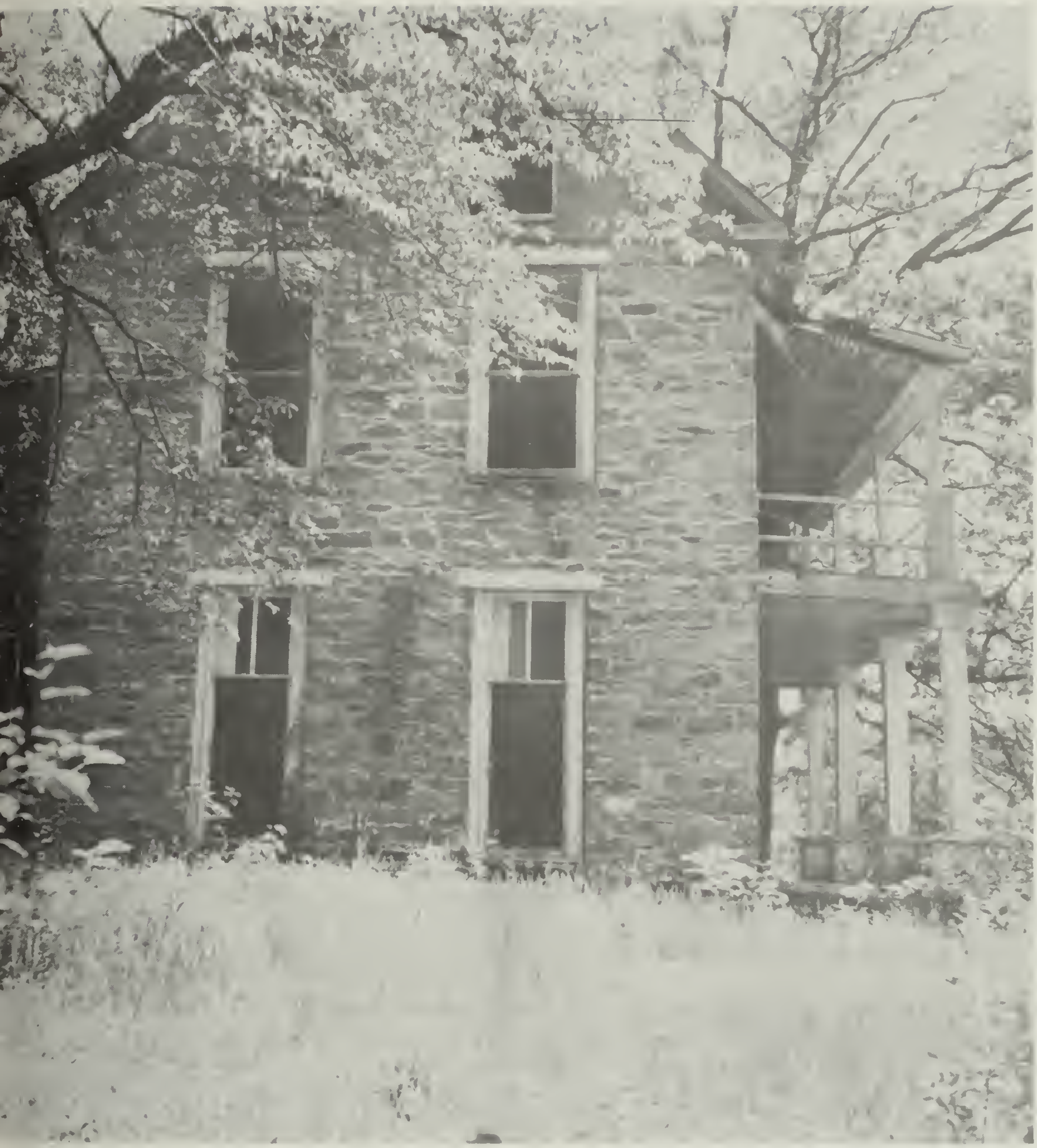


Figure 7.10 View of Kilham House on Lot 146 shortly before it was torn down. Direction unknown. (Harpers Ferry NHP)

In 1918 Hughes sold the entire property for $4,000 to Charles E. and Jennie Virts. Except for one short period the Virts maintained ownership of the land until 1942, when they conveyed the lots to Carl and Delsa Speakes and James Speakes. The State of Maryland purchased the eastern, wooded portion of Lots 152 and 153 from the Speakes' in 1960.[79]

Lot 154

Dr. Nicholas Marmion purchased Lot 154 (25 acres, 1 rood, 5 perches), along with Lot R, at public sale in 1848. The tract remained in the Marmion family until sold to the State of Maryland in 1961.[80]

Lot 155

William F. Elgin acquired Lot 155 (31 acres, 1 rood, 35 perches) in 1851 for $168.34. The tract remained in the Elgin family until 1895, at which time it was conveyed to Charles F. Thomas by Henry C. and Prudence C. Elgin for $157.50. The following year Thomas sold the lot to Daniel Baker, along with a number of other parcels on Maryland Heights. Members of the Baker family retained possession of Lot 155 until 1954, when it was sold to the State of Maryland.[81]

Lot 156

Walter James purchased Lot 156 (40 acres, 2 roods, 37 perches) and Lot 158 in 1851 for $239.82. In 1855 he sold these tracts, plus one other, to Catharine Little for $675. Little owned these properties until 1890, at which time she conveyed them to Daniel S. Cady for $600. Cady's widow, Sarah J., sold the lands to Lloyd William Clark in 1918.[82]

Throughout the first half of the twentieth century, the three tracts changed hands a number of times, primarily through mortgage defaults. Part of this land, on the west side of Hoffmaster Road (not including Lot 156), was used as an orchard. In 1942 the property came into the possession of Daisy Kern. Her heirs sold the eastern portion of Lot 156 to the State of Maryland in 1962.[83]

Lot 157

In 1851, Adam Ault bought Lot 157 (48 acres, 1 rood, 39 perches) for $121.22. That same year, he conveyed the tract to Jacob H. Grove for $145. In 1854 Ault acquired one acre of land and a log house on the west end of the lot from Grove for $60. By the 1870s, Grove had become heavily indebted and was forced to place the remainder of Lot 157 in trust. His trustees sold this land to Thomas Hite in 1879.[84]

In 1906, Lot 157 (not including the one acre previously conveyed to Ault) was sold to George R. Bready for $260. The heirs of Bready in turn conveyed the tract to Manuel Alger in 1944. Alger sold Lot 157 to Virgil B. Peck in 1950, who shortly thereafter conveyed it to Harvy Mills, Raymond Mills, and Milton Mills. The State of Maryland purchased the land from the Mills family in 1959.[85]

Lot 159

In 1854 Augustin A. Biggs and Lewis Watson purchased a number of lots, including Lot 159 (45 acres, 27 perches), for $11,000. They sold this tract in 1867 to Elizabeth Foster for $146. Following Foster's death in 1872, her daughter Henrietta Reed bought Lot 159 and the south half of Lot 160 for $510. At that time the lands were described as containing no improvements. Two days later, Henrietta Reed conveyed the two parcels to Susan Reed for the same price.[86]

Susan Reed sold the tracts to Martha Jenkins in 1875 for $450. Jenkins in turn sold them to William Snovell in two separate deeds, one written in 1881 and the second in 1883. The State of Maryland purchased Lot 159 and the south half of Lot 160 from the Snovell heirs in 1959.[87]

Lot 160

David Foster purchased Lot 160 (32 acres, 2 roods, 18 perches) in 1851. In 1856 the lot was split in half between Foster and his wife Elizabeth, and her son James Dobson. Elizabeth retained the south half until her death in 1872. Since that time it has been conveyed as part of Lot 159 (see discussion under that lot).[88]

Stone House Lot (Torres Lot)

The small tract (2 1/2 acres) known as the Stone House Lot lay between Harpers Ferry Road and the steep cliffs overlooking Harpers Ferry. This parcel apparently fell within the boundary of the C & O Canal Company, although at least some of it may have overlapped with Lot T. After concluding an agreement with the canal company, James H. Elgin built a stone house on the land in the winter of 1840-41, first blasting away much of the bedrock that comprised the tract (Figure 7.11).[89]

Figure 7.11 1859 Photograph of Lock 33 area. The Stone House sits near the lower left edge, with a two-story porch in front with laundry hanging from it.

Unfortunately for Elgin, he never obtained title to the land. During the Civil War, the commander of the Union army at Harpers Ferry removed Elgin's tenant from the house and turned it over to a canal employee named John H. Reed. Following the War, Elgin fought to regain what he believed to be his rightful property, but was never successful.[90]

John H. Reed operated a store in the stone house, although it apparently also served as a drinking establishment. Upon his death in 1889 the property passed to his son, Winfield S. Reed. Within a few years Winfield Reed had become indebted to Albertus Spencer. After obtaining a judgment against Reed, Spencer acquired the Stone House Lot and Lot 142 at public sale in 1893.[91]

The stone house continued as a combination store and drinking establishment under Spencer's proprietorship until shortly before the beginning of Prohibition in 1917. The place had a bad reputation and was forced to shut down following a successful petition drive. This petition was circulated after a fight occurred outside the building that resulted in several deaths.[92]

Around 1917 Spencer constructed a two-story frame house adjacent to the stone house. He moved his store to this building and established a museum in the stone house that featured, among other things, the cook stove used by John Brown and his men at the nearby Kennedy farm house. Prior to this time, Spencer had conveyed his properties to his wife, Mary. When she died in 1923 the stone house passed to her sister, Elizabeth A. Stockman, and the remaining properties to her nephew, Edgar Spencer Weaver.[93]

Stockman lived on the second floor of the stone house from 1924 to 1927, while continuing to operate the museum on the first floor. In 1927 she moved to Frederick, taking the items from the museum with her. At that time Stockman also conveyed the house to her son, Edgar Spencer Weaver, who lived on the second floor of the frame house with his family. In 1930, however, Weaver moved to a newly-constructed house on Lot 142.[94]

With the lifting of prohibition in 1933 the two-story frame house was rented by Weaver's widow, Hester Gertrude Weaver, as a "beer joint." For the next decade this disreputable establishment was known as the "Salty Dog Saloon," as the tune "Salty Dog" was a favorite with its patrons. During this period the stone house remained vacant much of the time. The drinking establishment was closed in the early 1940s because of insufficient parking around the building.[95]

In 1947, Hester Gertrude Weaver sold the Stone House Lot to Patrick John O'Brien. O'Brien rented the frame and stone buildings as private residences until 1953. In that year he sold the property to Richard and Marie Torres of Washington, D. C. The State of Maryland purchased the tract from the Torres in 1958 for $5,000.[96]

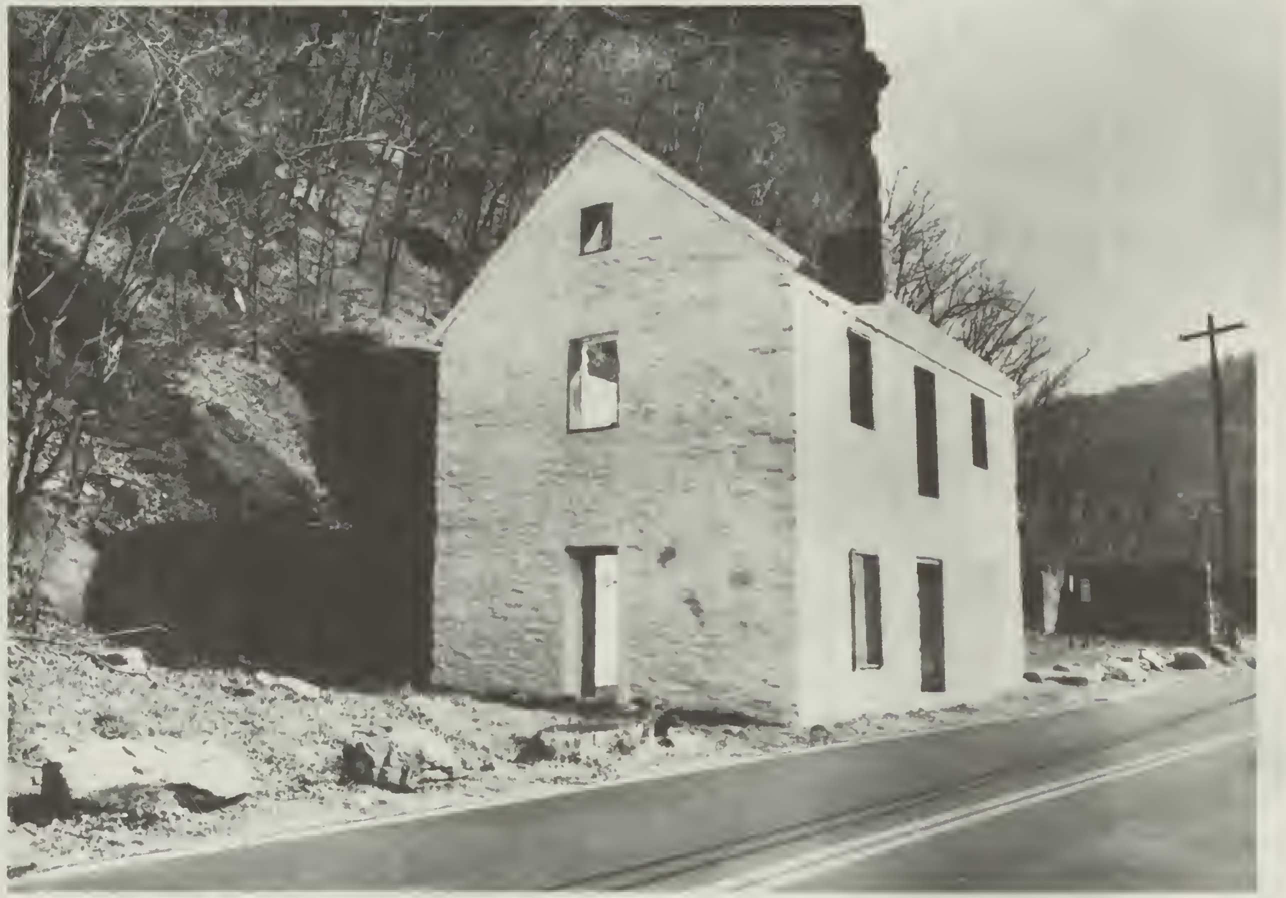


Figure 7.12 Stone house at Lock 33, on east side of Harpers Ferry Road. Looking southeast.

By the time Maryland Heights was transferred to the National Park Service in 1963, the frame building had deteriorated to the point of collapse. Since that time it has disappeared. The stone house suffered two fires, the first in 1960 and the second several years later, which left only a roofless, stone shell standing (Figure 7.12).[97]

Gaskins Lot

The Gaskins Lot is a small (.47 acre) tract situated on the east side of and adjacent to Lot 139. This land apparently was part of the Stone House Lot, as it belonged to Albertus and Mary Spencer at the turn of the century. In 1905 the Spencer's conveyed the parcel and a house situated on it to William F. Reynolds.[98]

Reynolds held the lot for almost 50 years, finally selling it in 1952 to Bessie T. Gaskins. An appraisal of the property completed five years previously listed a small dwelling assessed at $500. In 1960, the State of Maryland purchased the tract from Lester and Bessie Gaskins. By that time no improvements remained on the property.[99]

DOMESTIC SITE DESCRIPTIONS

Clustered remains of small domestic sites are readily apparent along the base of Maryland Heights (Figure 7.1). Given the scope of the project, emphasis was placed on mapping the visible, above-ground features within these sites as part of an overall effort to record the cultural features on the mountain before they are lost to vandalism and erosion, and to provide a data base for management purposes. As a result, research goals were limited to questions of when the domestic sites were constructed, who lived on them, when they were abandoned, and the identification of individual features. Topics for additional research naturally arose during the course of the fieldwork and historical background study. These questions are addressed in the Summary and Conclusion section at the end of this chapter.

Methodology

The mapping procedure used to record the domestic sites on Maryland Heights varied little from that utilized in the campground areas. Known reference points provided initial bearings. These points generally were wooden stakes previously set in while traversing the road system. Once these bearings had been established, sufficient points were recorded of each feature to define its dimensions and form. In addition, measurements were taken of such attributes as depth and height, and notes were recorded for each feature on a separate feature form.

A feature was defined as any human-made alteration to the landscape. In the domestic sites, they consisted of stone foundations, walls or piles, earthen platforms, depressions, and terraces. Each feature was assigned a unique number that began with the lot designation. For example, the second feature recorded in Lot K was identified as Feature LK-F2. Terraces, however, were not given feature numbers.

As Lot P was mapped as part of Lot Q before the boundary between the two was known, its features were assigned numbers from Lot Q. This numbering was retained on the maps and in the descriptive section of the report to prevent confusion. In addition, two sites were recorded on Lot T. The features on Site 1 were assigned numbers 1 through 9, and those on Site 2, 10 through 17.

Features were located by conducting extensive walkovers across the sites and flagging visible anomalies. Some features were cleared of vegetative overgrowth prior to mapping. Photographs were taken of the major features.

Directional alignments given below in the descriptive section may vary somewhat from magnetic north on the maps, as they are taken from field notes recorded while mapping the sites. In the field notes, north follows the ridgeline, while west and east extend either up slope or down slope, depending upon which side of the mountain the site is located.

Lot K Domestic Site (18WA408)

Lot K is located on the east side of Maryland Heights within the northeast quadrant of the park property. The lot stretches from a dirt road (Road A) near the foot of the mountain to the crest and encompasses 22 acres. The site described in this section lies along the east end of Lot K, just above the road, and covers approximately three acres (Figure 7.1).

The natural topography within the site has been altered extensively as a result of the settlement, but still remains fairly evident. The eastern third of the site is situated on a moderate slope. The remainder, however, lies on a steep, rocky, and uniform slope that characterizes the remainder of Lot K. All loose surface stone within the site confines has been removed. This stone most likely was incorporated into the many stone features recorded during the survey. Young, secondary growth presently covers the site.

Adjacent to Lot K are two other domestic sites, both of which lie outside the park boundary. On the south side, the Darton Site (Lot L) has been almost totally destroyed by construction of a modern house in 1986-87. A small domestic site borders Lot K to the north. This site, known as the King Site (18WA407), is located in Lot J and includes the ruins of two log structures and a series of small terraces.

The Lot K Site is divided into two, roughly equal halves by Feature LK-F4, a meandering, dry-laid stone wall (Figure 7.13). The north half of the site measures approximately 200 ft wide and 280 ft deep. Along its north side, a second well-constructed, dry-laid stone wall (Feature LK-F3) parallels Feature LK-F4 and defines both the north edge of the north half and the boundary between Lots J and K. The western extent of the north half is marked by Feature LK-F15, a short, poorly-preserved dry-laid wall segment that lies halfway between the end points of Features LK-F3 and LK-F4. Remnants of a barbed wire fence stretch across the gaps between Feature LK-F15 and the other two walls.

Internally, the north half of the site is partitioned into three major sections divided from each other by retaining walls. The lowest, or eastern-most division, is about 60 ft wide. It consists of a relatively level terrace supported by Feature LK-F1, a dry-laid stone retaining wall constructed above the west edge of Road A. The only apparent feature in this area is a small, stone structural foundation (Feature LK-F8) that measures 15 x 11 ft and is integrated into the Feature LK-F3 stone wall on the north edge of the site.

An ephemeral road trace (Road A2L) passes through this lowest section, entering the site through a gap between Features LK-F1 and LK-F3. The road continues up a ramp that passes through the remnants of Feature LK-F2, a stone retaining wall, and then fades out after a short distance.

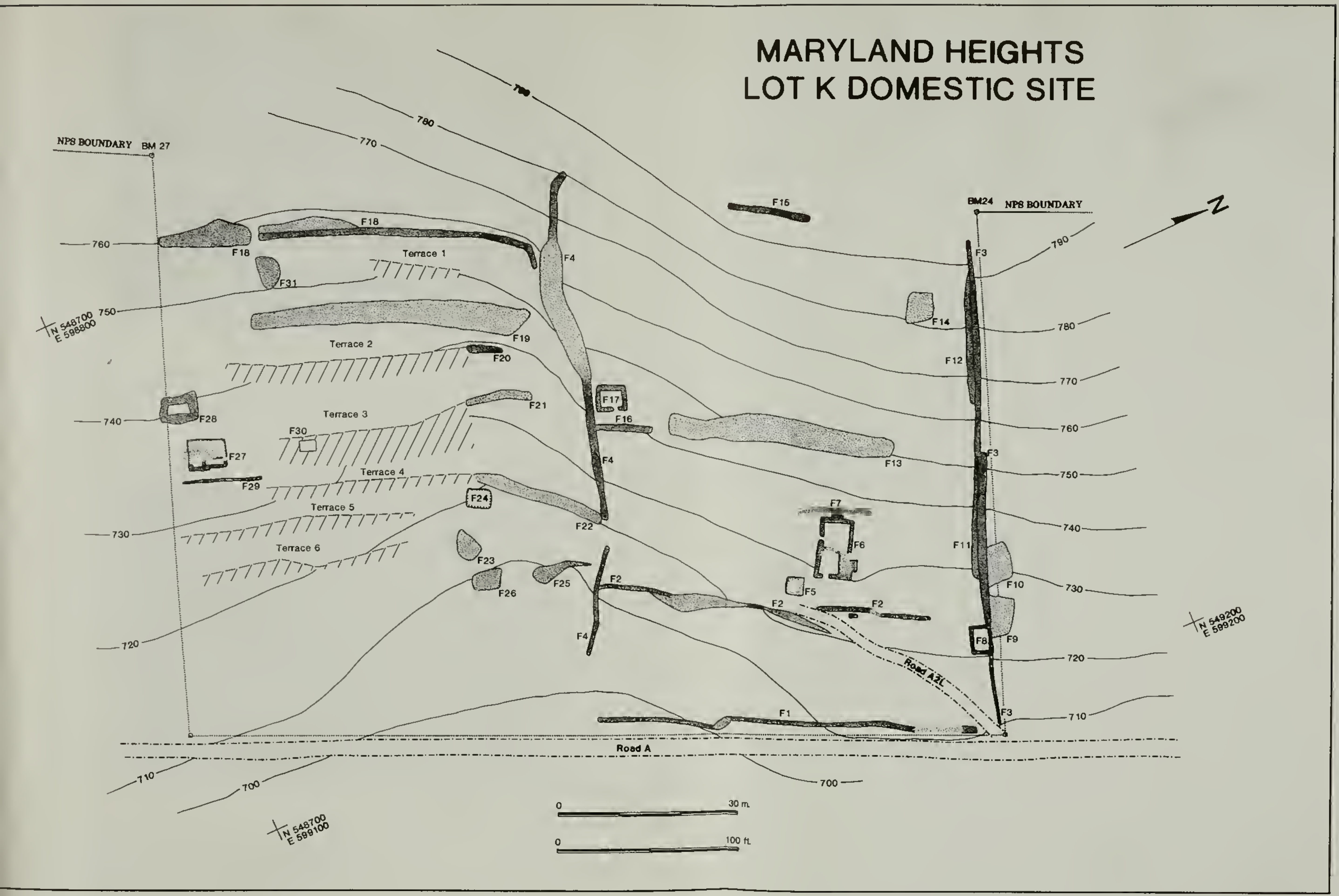
The Feature LK-F2 retaining wall divides the lower section of the north half of the site from the middle section, which is about 90 ft wide. Feature LK-F6, the primary structural foundation recorded on Lot K, dominates this area. This relatively large (32 x 17 x 33 x 20 ft) foundation is constructed of fieldstone set in a fine, light brown, dirt-based mortar.

The interior of the feature divides into two distinct and slightly different-sized chambers. A virtually intact stone chimney dominates the east chamber (20 x 15 ft) and forms part of the north wall (Figure 7.14). This chimney measures 6 x 4 ft along its base and stands approximately 16 ft high. On the interior side of the chimney is a small hearth capped by a large stone lintel 5.2 ft in length. The hearth has been partially blocked with laid stone, while a small, round hole has been cut into the flue above the lintel.

Extending six feet south from the base of the hearth is a ledge that ends in a sloping retaining wall three feet deep. This wall defines the north side of a small, shallow cellar depression measuring 11.5 ft square. Along the east wall of the chamber is an entryway that is four feet wide and leads into the cellar depression (Figure 7.14).

The west chamber, with dimensions of 18 x 17 ft, is less imposing than the east half of the structure. In the center of the west wall of this chamber

NPS
N 548
E 59


MARYLAND HEIGHTS
LOT K DOMESTIC SITE
NPS BOUNDARY
BM 27
BM24
NPS BOUNDARY
Z
N 548700
E 598800
N 549200
E 599200
N 548700
E 599100
790
780
770
760
750
740
730
720
710
700
F1
F2
F3
F4
F5
F6
F7
F8
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F10
F11
F12
F13
F14
F15
F16
F17
F18
F19
F20
F21
F22
F23
F24
F25
F26
F27
F28
F29
F30
F31
Terrace 1
Terrace 2
Terrace 3
Terrace 4
Terrace 5
Terrace 6
Road A
Road A2L
0
30 m.
0
100 ft.

Figure 7.13

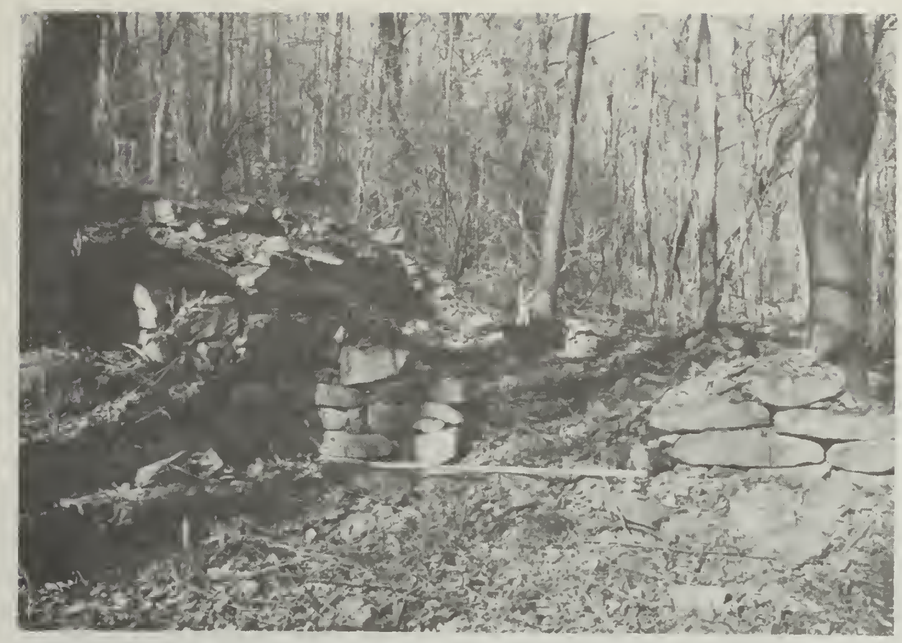


Figure 7.14 Lot K Domestic Site. East chamber and chimney of Feature LK-F6, looking north. In the center foreground is an entryway into the chamber. In the background , at base of chimney stack, note the partially-blocked hearth with stone lintel above. Behind the east chamber lies part of the west chamber and Feature LK-F7, a dry-laid stone retaining wall.

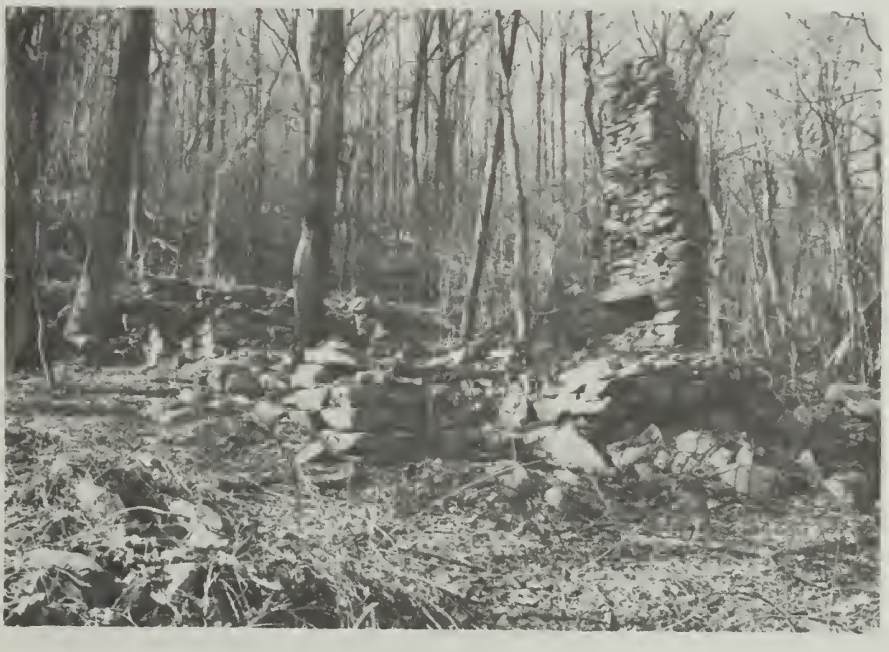


Figure 7.15 Lot K Domestic Site. West chamber of Feature LK-F6, looking north-northeast. In the center foreground is an entryway into the chamber. Note the chimney base at left center with lintel stone and part of hearth. Behind the chimney base lie remnants of Feature LK-F7, a dry-laid stone retaining wall.

lie the ruins of a chimney base that measure 6 x 4 ft (Figure 7.15). A lintel stone 4.2 ft in length caps the intact hearth. The interior face of the west wall ties into the east edge of the chimney base. Rubble, originating from the collapse of the upper part of the chimney, fills the chamber interior. A narrow entryway cuts through the south wall of the west chamber.

The entire foundation sits on artificially-leveled ground. Holding back the slope on the west side of the feature is Feature LK-F7, a dry-laid stone retaining wall. The ground on the west side of this retaining wall also has been leveled artificially.

A short distance from the southeast corner of the main structure stands Feature LK-F5, a smaller stone foundation in collapsed condition. This feature measures 10 x 9 ft and is set in the same type of dirt-based mortar found in Feature LK-F6. The interior is rubble filled, most certainly from the collapsed walls.

The ruins of two stone retaining walls (Features LK-F13 and LK-F16) separate the middle and upper sections of the north half of the site. The upper, western-most section spans 120 ft in width and consists principally of a steep, rocky slope, with the exception of the narrow, leveled terrace directly behind the Feature LK-F13 retaining wall.

Tucked into the southeast corner of this upper area is Feature LK-F17, a stone foundation measuring 15 x 13.5 x 15 x 13.5 ft and comprised of fieldstone set in a fine light brown, dirt-based mortar (Figure 7.16). An entryway three feet wide cuts through the east wall. Rubble from collapsed walls fills the interior of the structure.

The foundation sits on an artificially-leveled terrace supported by a dry-laid stone retaining wall (Feature LK-F16) located about ten feet east of that structure (Figure 7.16). A 10-foot gap exists between the north end of this retaining wall and Feature LK-F13, the ruined retaining wall that extends across most of the north half of Lot K.

The south half of Lot K measures roughly 210-220 ft wide by 270 ft deep. The stone wall (Feature LK-F4) that extends through the center of the site delineates this half along its north side. Along its west end is Feature LK-F18, a dry-laid stone wall. The dirt road (Road A) borders the east side; Feature LK-F1, the retaining wall that defines the east end of the north half, does not extend south of Feature LK-F1. Interestingly, no physical boundary is evident along the south edge. Superimposing the south boundary of Lot K over the mapped features, however, reveals that none of the features extend past this line, but that some abut against it (Figure 7.13).

A series of narrow, artificially-constructed terraces separated from each other by short, steep slopes, characterize the south half. These terraces and slopes are cleared of all stone with the exception of several stone embankments (Features LK-F20 to LK-F22) that mark the northern ends of some

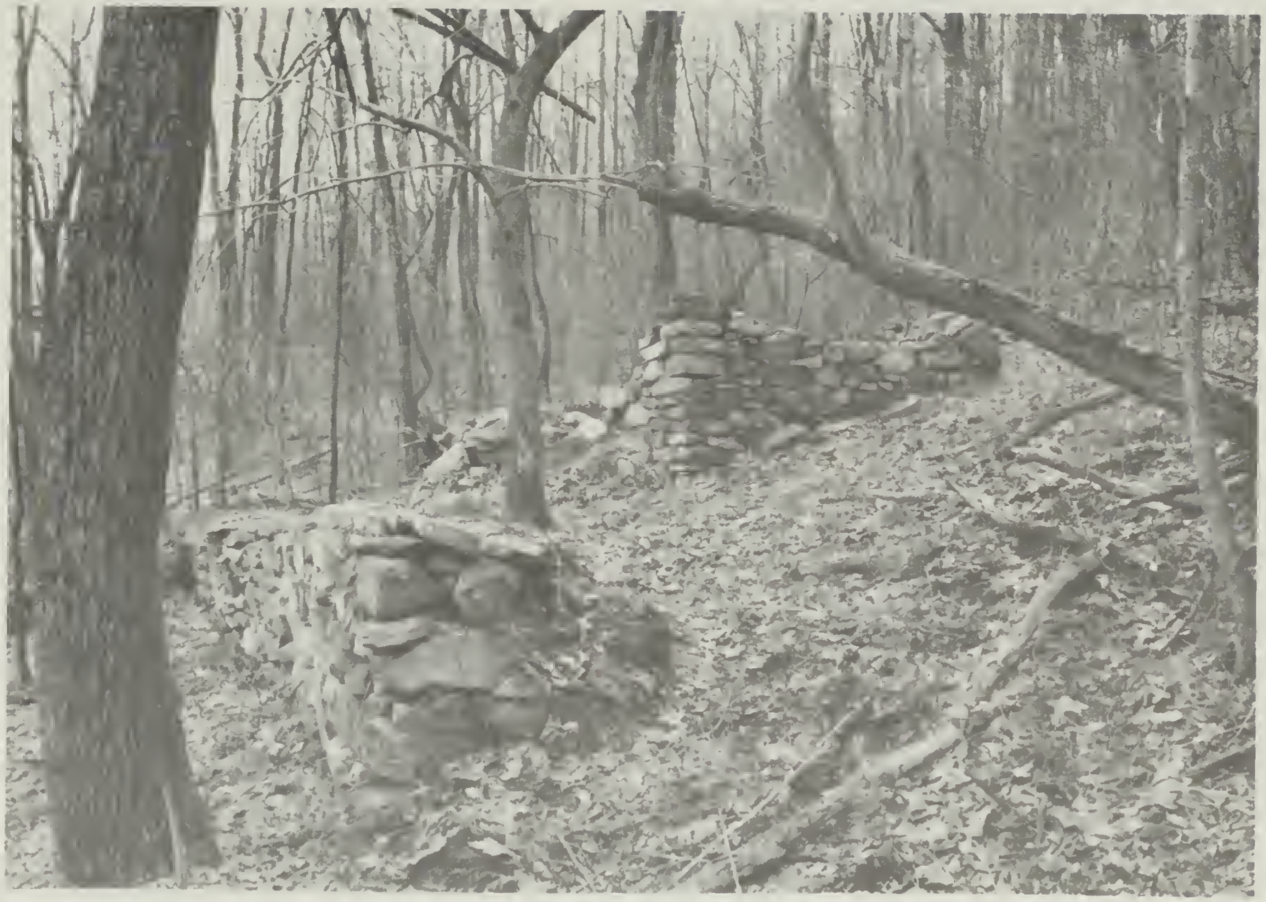


Figure 7.16 Lot K Domestic Site. Features LK-F16 and LK-F17, looking southeast. In the left foreground sits Feature LK-F16 a dry-laid stone retaining wall. To the right lies Feature LK-F17. a dry-laid stone foundation.

of the slopes, and Feature LK-F19, the remnants of a dry-laid stone retaining wall along the west edge of Terrace 2.

About halfway up the south side of Lot K sits Feature LK-F27, an ephemeral stone foundation constructed of fieldstone set in a fine light brown, dirt-based mortar and measuring 20 x 17 x 20 x 16 ft. Only the east half of this structure, however, is defined by visible stone footers. Both the north and south walls extend only four feet from the east wall before disappearing under rubble and overburden. Extending perpendicularly from the east wall is an interior wall that also disappears quickly under a mound of brick rubble. This interior wall apparently divides the feature into two chambers--one on the north side five feet wide, and another on the south side ten feet in width. The south half of the east exterior foundation wall is wider than the north half, and projects about one foot farther to the east.

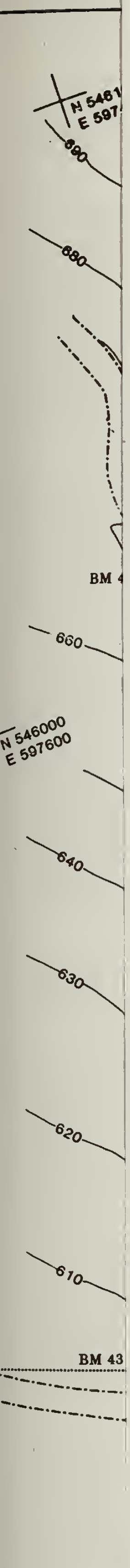
Vague, slightly mounded earthen alignments that may cover stone foundations define the west half of Feature LK-F27. A heavy concentration of brick rubble overlies the middle and south end of the foundation. The bricks all appear to be machine made; some have eroded impressed lettering that cannot be deciphered.

Extending south from the north foundation wall of Feature LK-F27 is a short line of stone 4.5 ft in length that disappears under the brick rubble. Only the east face of this alignment is visible. In the southeast corner are remnants of two wooden beams or joists that extend in a north-south direction. A sawed board with tongue-and-groove molding straddles the two beams. Scattered across the feature are additional, half-buried wooden beams.

About seven to eight feet east of the foundation stand the ruins of a dry-laid stone retaining wall (Feature LK-F29). This wall supports the built-up, leveled area on which the foundation sits. A short distance up slope from the stone foundation lies Feature LK-F28, a shallow, oddly-shaped cellar depression cut into the slope and measuring 13 x 5.5 x 10.5 x 6 ft. With the exception of the east side, dry-laid fieldstone lines the interior. A large amount of rubble and earth mounds against the exterior sides of these crude retaining walls. A stone rubble concentration about three feet wide and extending the length of the cellar depression defines the east side of the feature.

Forty feet north of Feature LK-F27 sits an artificially-leveled, rectangular platform (Feature LK-F30) measuring 9 x 6 x 8 x 6 ft which may represent the base of a small structure. This feature cuts into the short, steep slope between Terraces 3 and 4.

Feature LK-F24, a shallow, rectangular depression that measures 12 x 10 ft, lies at the north end of Terrace 5. Down slope from this possible structural feature are three amorphously-shaped stone concentrations (Features LK-F23, LK-F25 and LK-F26) which lack structural definition.


N 546
E 597
690
680
BM 4
660
N 546000
E 597600
640
630
620
610
BM 43

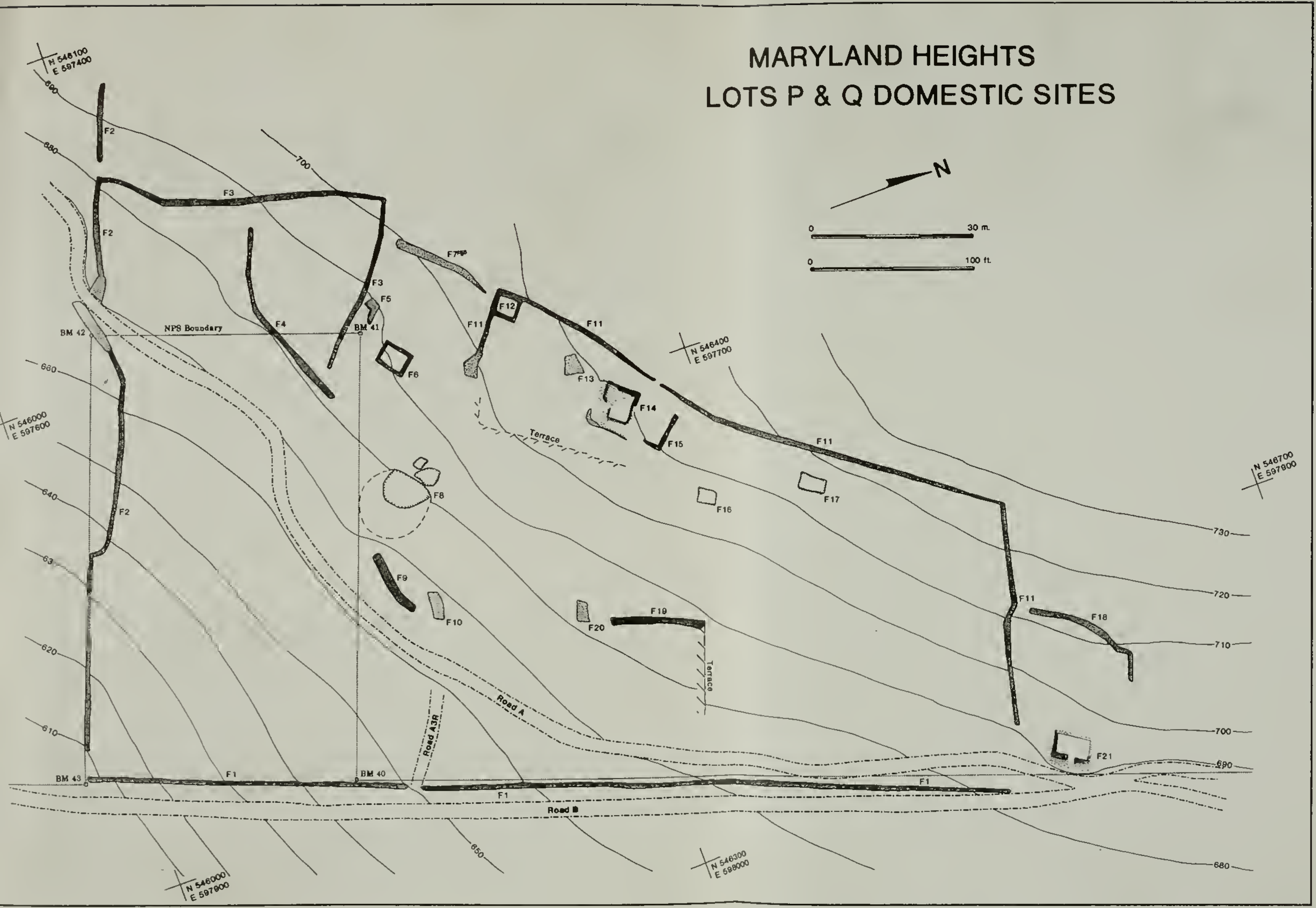

MARYLAND HEIGHTS
LOTS P & Q DOMESTIC SITES
N
0
30 m.
0
100 ft.
N 548100
E 597400
N 546400
E 597700
N 546000
E 597600
N 546700
E 597900
N 546000
E 597900
N 546300
E 598000
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
F13
F14
F15
F16
F17
F18
F19
F20
F21
BM 40
BM 41
BM 42
BM 43
NPS Boundary
Terrace
Road A
Road A3R
Road B
600
610
620
630
640
650
660
680
690
700
710
720
730

Figure 7.17

Lot P Domestic Site (18WA412)

Lot P lies on the east flank of Maryland Heights and encompasses 22 acres, 2 roods, and 6 perches. This lot stretches from Road A (the modern fire road) along its east side to the crest of the mountain. Only the extreme southeast corner of the lot, however, contains notable historical remains (Figure 7.1). These improvements cover approximately one-quarter of an acre and are comprised of Feature LQ-F18, the remnants of a crudely-constructed, meandering, dry-laid stone wall, and Feature LQ-F21, an ephemeral stone foundation (Figure 7.17).

The stone wall defines the western extent of the site and part of the north side. A second stone wall, Feature LQ-F11, lies along the south edge of the site and marks the boundary between Lots P and Q. Roads A and B bound the east side. Although the ground surface surrounding the site is very rocky, the enclosed area defined above has been cleared of all stone.

The only noted structural feature is a poorly-preserved, dry-laid stone foundation with a shallow cellar depression cut into the side of the slope. A gap in the east wall suggests that this structure was oriented toward the east and opened onto Road B, the major historical road extending along the east flank of the mountain. Intact wall segments are two feet wide; the exterior dimensions of the structure are 22 x 14 ft. Along the east side of the feature and part of the south side is low-lying stone rubble, perhaps from wall collapse. A stone foundation wall may not have existed along the west side of the structure.

Lot Q Domestic Site (18WA413)

Lot Q is located on the east flank of Maryland Heights and covers 24.25 acres. This lot extends from Road B on its east side to the top of the mountain. The domestic site sits at the eastern-most end of the lot and is about five acres in size (Figure 7.1). One acre situated in the southeast corner of this site lies outside the park boundary, but was included in the survey as it forms an integral part of the site.

A relatively uniform slope toward the southeast characterizes the topography within the site. The grade above the west end of the site steepens quickly and becomes very rocky. The west edge of the Lot Q Site appears to follow the base of this steep slope, giving the site its odd configuration (Figure 7.17).

A series of dry-laid stone walls bound all four sides of the site (Figure 7.18). The most prominent of these, Feature LQ-F1, stretches across the entire east side of Lot Q and parallels the west edge of Road B, a major historical road trace which extends the full length of the east flank of Maryland Heights (it merges with Road A in Lot P). A small road (A3R)

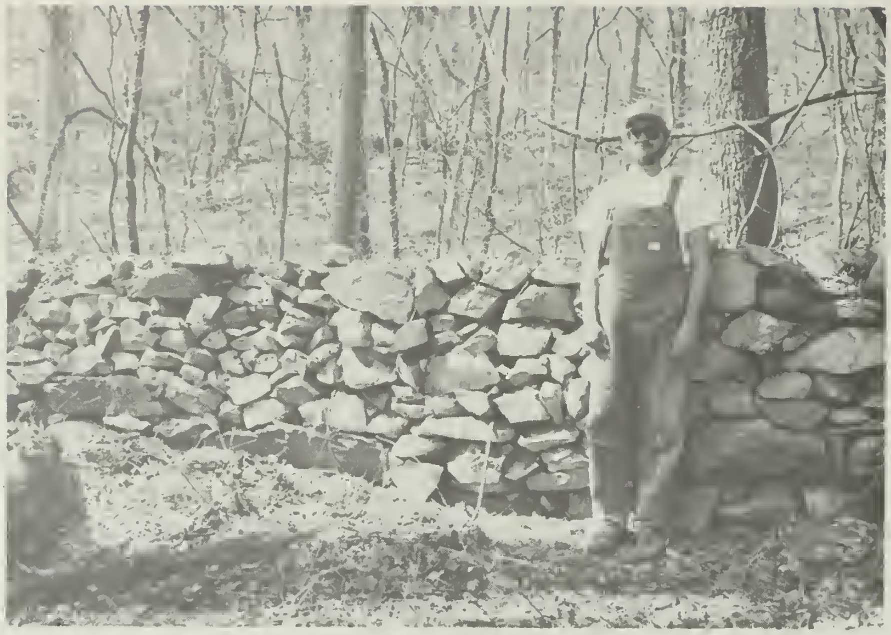


Figure 7.18 Lot Q Domestic Site. A section of Feature LG-F11, a dry-laid stone retaining wall, near Feature LQ-F14.

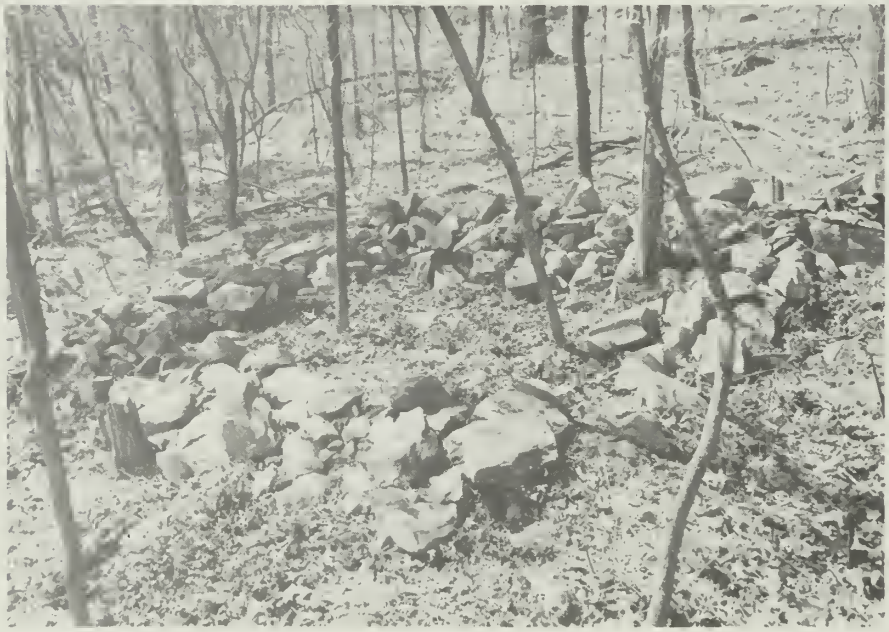


Figure 7.19 Lot Q Domestic Site. Feature LQ-F12, looking west. In the foreground is the northeast corner of the feature.

branches off Road B and extends a short distance into the site through the only gap in this wall.

The south end of Feature LQ-F1 has been broken off, presumably by construction of a built-up ramp or road segment that passes through a 15-ft gap between that wall and Feature LQ-F2, a stone wall that delineates the southern bounds of the site. Construction of the ramp also destroyed the east end of Feature LQ-F2, as evidenced by stone rubble scattered down slope from the ramp; most likely the two walls once joined with each other in a closed corner.

Farther to the west the south boundary wall also was ruptured by construction of a modern, bulldozed fire road (Road A) that passes through the center of the site. In the northeast corner of the lot, the fire road also disrupts the north end of Feature LQ-F1 and the east end of Feature LQ-F11, a stone wall that roughly follows the boundary between Lots P and Q. It is possible that these two walls also joined at one time, but little evidence exists to make a determination one way or the other.

The features recorded during the survey cluster in the middle third of the site, and all lie west of the fire road. A focal point of the site is Feature LQ-F8, a large, roughly D-shaped depression measuring approximately 26 x 20 ft and perched a short distance above the fire road. This cellar hole apparently was created by construction of a semicircular mound or berm on the down slope, or eastern side of the feature. Two associated smaller and shallower depressions cut into the slope along the west edge of the main depression.

About 50 ft up slope from the large depression lies Feature LQ-F6, an ephemeral, low-lying, dry-laid stone foundation with exterior dimensions of 16 x 14 ft. In proximity to this structural remain is a stone concentration (Feature LQ-F5) with two defined sides that lies on the north side of Feature LQ-F3, a stone wall. Together with Feature LQ-F3, this feature encloses an area measuring 10 x 6 ft. It is possible that this feature supported a small structure at one time.

Both Features LQ-F5 and LQ-F6 lie in a 75-ft wide gap created by the abrupt turning toward the east of the two stone walls (Features LQ-F3 and LQ-F11) that define the western limits of the site. This gap is bridged somewhat along its western end by Feature LQ-F7, a scattered, low-lying stone alignment. Curiously, the main part of Feature LQ-F3 roughly parallels the west end of the one-acre tract excluded from National Park Service holdings, and also extends roughly the same length. In addition, the north side of that wall is almost in line with the northern boundary of that small parcel.

An artificially built-up terrace tucks into the angle formed by the principal, west side of Feature LQ-F11 and its shorter, southern extension. On the north end of this terrace lies Feature LQ-F14, an ephemeral, poorly-defined stone foundation with approximate interior dimensions of 18 x 12 ft. The most notable feature of this structure is the substantial west end of the south wall, which projects about three feet south from the ill-defined east half, and also contrasts with the ephemeral nature of the other walls. A large amount of stone rubble surrounds this solid wall section. The rubble fills the west end of the foundation and obscures the interior configuration of the wall.

On the north side of Feature LQ-F14 stands a two-sided, dry-laid stone retaining wall (Feature LQ-F15) that forms a slightly built-up, level enclosure adjacent to that structure. Although in line with the foundation, the east leg of the retaining wall does not tie into the northeast corner of Feature LQ-F14, leaving a gap between the two features. Opposite this gap is an opening in Feature LQ-F11, the wall marking the west boundary of the site, that leads to an unmapped road extending up the mountainside. It is likely that this road once extended into the site through these two openings.

In the southwest corner of the terrace lies Feature LQ-F12, a fairly well-preserved, dry-laid stone foundation or enclosure with interior measurements of 12 x 8 ft (Figure 7.19). Two sides of this possible structure incorporate part of Feature LQ-F11. The east and north sides of Feature LQ-F12 appear to abut against that wall. No evidence exists of an entryway into this feature; daffodils and other formerly domesticated plants presently grow in its interior, suggesting that the feature may have been an open enclosure.

North of the terrace and its associated features, along the west edge of the site, are two rectangular-shaped depressions or leveled platforms cut into the slope that may represent the bases of two small structures. The larger of the two, Feature LQ-F17, measures about 15 x 8 ft and is defined along its east side by a mounded rubble and earth berm. The second feature (LQ-F16) has slightly smaller dimensions of 12 x 8 ft, but also has a berm on its down slope side.

In the middle of the site, a short distance above Road A, stand the remnants of a dry-laid stone retaining wall (Feature LQ-F19) about 60 ft in length. A steep and well-defined earthen slope 50 ft in length extends eastward at a right angle from the north end of this feature. The area partially enclosed by the retaining wall and earthen slope is relatively level and cleared of stone, but no features are visible on the ground surface.

Lot S Domestic Site (18WA414)

Lot S lies in the southeast quadrant of Maryland Heights and, at 63 acres, is the second largest Iron Works lot within the park boundary. The site recorded on this tract, however, covers less than one-half of an acre and lies in the extreme northeast corner of the lot (Figure 7.1). It is the only domestic habitation located on Lot S.

The site sits on a uniform slope near the top of a narrow ravine that extends southward about 1,000 ft to the small community of Sandy Hook. To the north, the site borders an extremely rocky, but gradual slope with a number of small springs flowing through it. West of the main site the ground angles steeply upward. Conversely, to the east the ground drops sharply, particularly below Road B. A secondary growth of tulip poplar, oak, and hickory presently covers the area.

Several road traces pass by the site. A road described historically as the Thirty-Foot Reserve Road and mapped as Road B traverses across the east boundary of Lot S. A second road (B1R) intersects this primary road trace and extends up slope along the north edge of the site, which also comprises the boundary between Lots R and S. Once above the site, Road B1R angles sharply toward the southwest. Finally, Road B3R branches off of Road B and runs up slope a short distance south of the site. This road trace predates Road B1R, as the latter crosses over and obliterates it.

Dry-laid stone walls bound the site on three sides (Figure 7.20). The first of these, Feature LS-F1, defines the eastern and southern extent of the main complex, although a crudely-constructed wall (Feature LS-F7) lying south of the enclosed area parallels the west end of this feature. Feature LS-F2, a meandering, crudely-constructed wall that partially follows the northern edge of Road B1R, extends along the north boundary of the site. This wall strongly contrasts with the straight and finished appearance of much of the well-preserved south wall.

A stone retaining wall fragment and rubble embankment (Feature LS-F6) partially defines the western extent of the main site complex. The south boundary wall appears to tie-in to this feature, while farther to the south Feature LS-F7, the crude wall paralleling Feature LS-F1, terminates a few feet short of the rubble embankment. The rubble ends about 70 ft south of Feature LS-F1, well outside the main complex.

The focal point of the site is Feature LS-F5, a large stone foundation located at the far western end of the enclosed area (Figure 7.21). This feature measures 30 x 22 ft and cuts into the slope to form a shallow cellar hole. The walls comprising this structure are the only ones on the site set in mortar. While the north and south walls appear to have been constructed free standing, the west wall functions as a retaining wall for the cellar depression. Very little remains of an east wall. Mounded rubble packs against the exterior sides of the north and south walls, and also extends along the east side of the structure.

A perpendicular wall segment about three feet in length extends from the exterior face of the south wall. Unfortunately, rubble obscures all but the east face of this extension. The wall segment starts about one-third of the distance along the south wall from the southeast corner of the structure.

Roughly parallel to the Feature LS-F5 structural foundation and lying 20 ft east of it is a dry-laid stone retaining wall (Feature LS-F3) that supports the terrace on which the foundation is constructed. The south end of the wall abuts against the south boundary wall (Feature LS-F1), and the north end extends no farther than the north side of Feature LS-F5. In

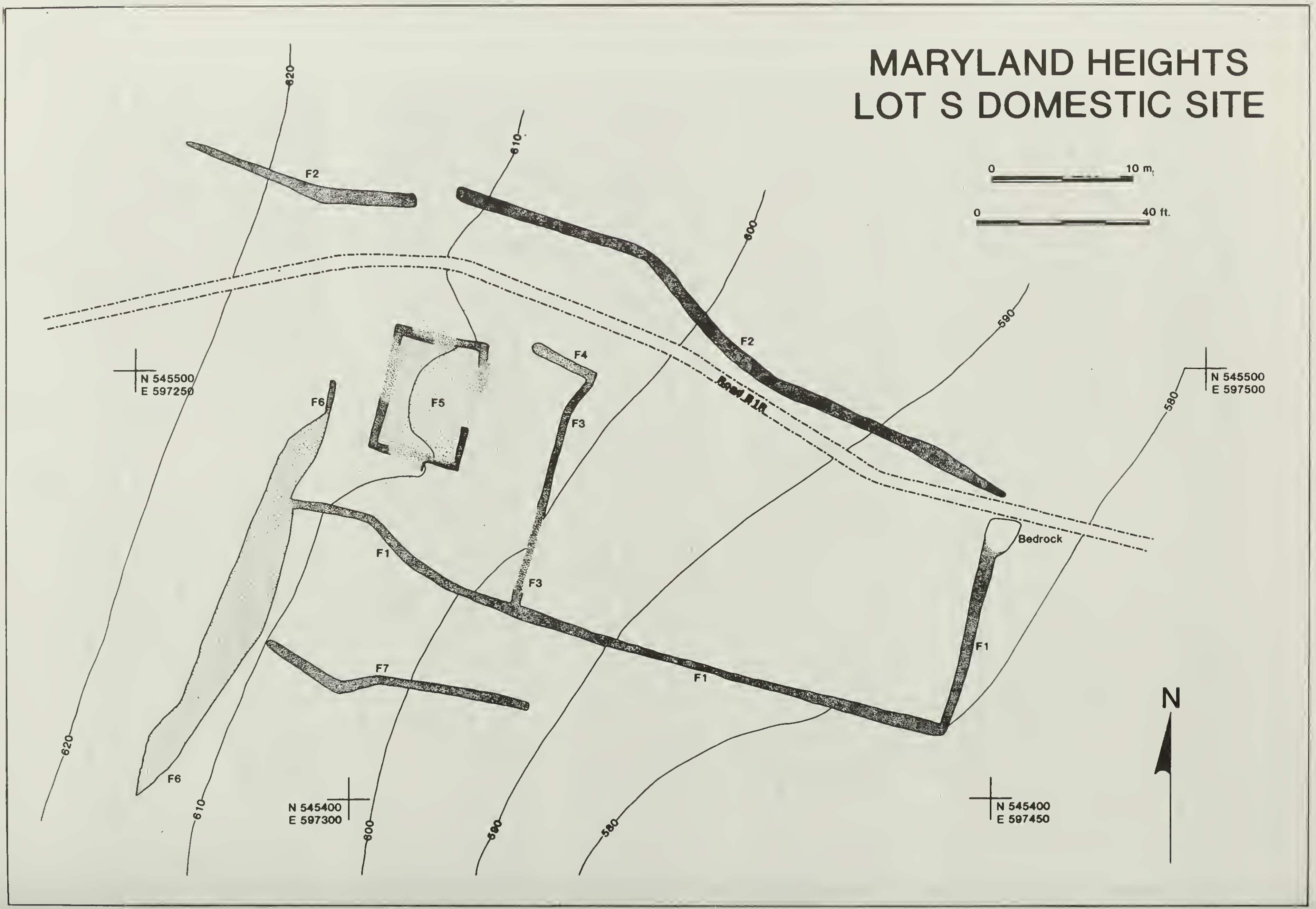

MARYLAND HEIGHTS
LOT S DOMESTIC SITE
0
10 m
0
40 ft.
N
N 545500
E 597500
N 545500
E 597250
N 545400
E 597300
N 545400
E 597450
620
610
600
590
580
F1
F2
F3
F4
F5
F6
F7
Bedrock

Figure 7.20

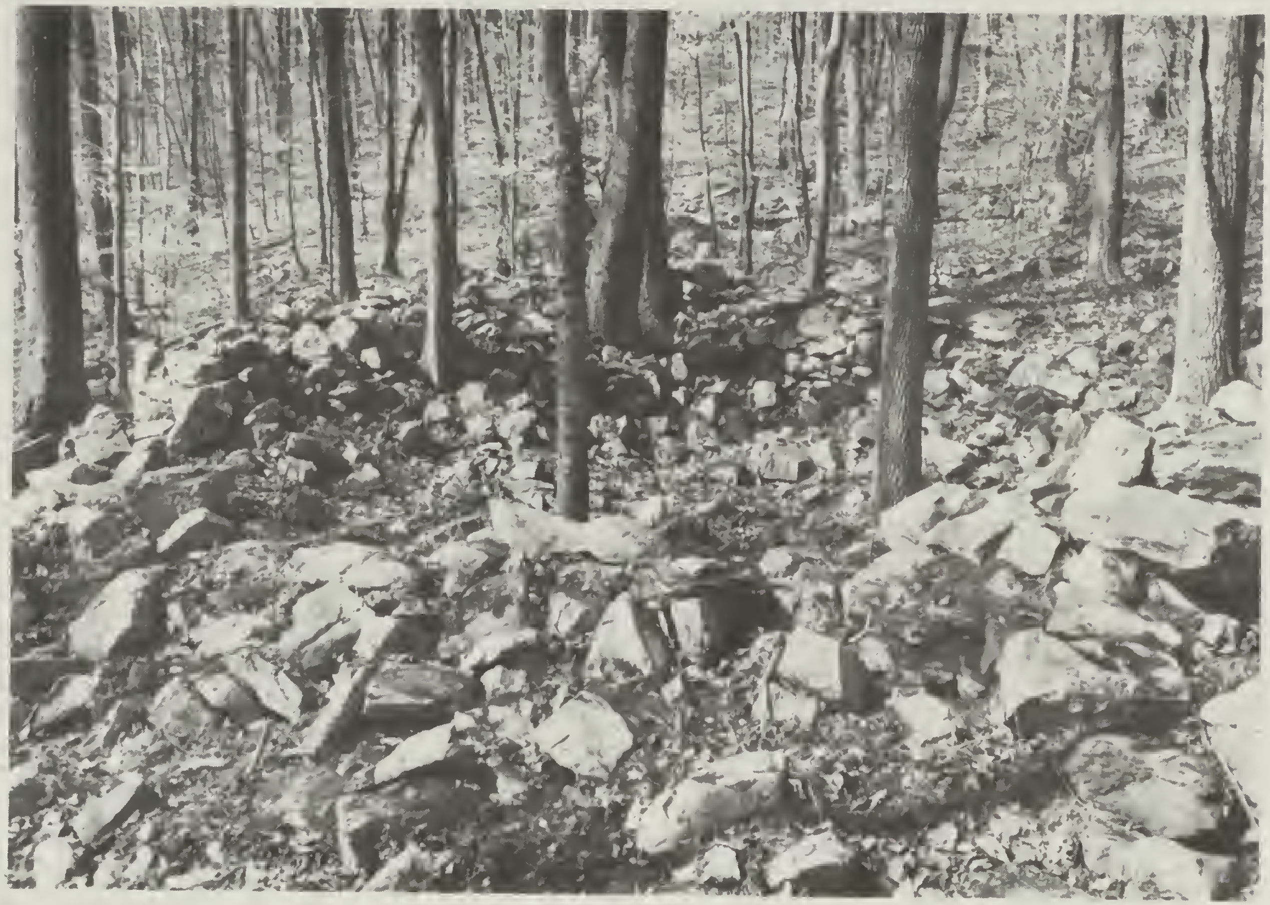


Figure 7.21 Lot S Domestic Site, Feature LS-F5.

fact, at this point the retaining wall at one time may have formed a corner with Feature LS-F4, an ephemeral wall segment that extends in the general direction of the northeast corner of the structural foundation.

The small area enclosed by the stone walls of Features LS-F1 and LS-F2, and by the retaining wall of Feature LS-F3, is almost clear of loose surface stone. This contrasts greatly with the extremely stony ground surrounding the site, especially to the north.

On the steep slope west of the main complex lie a number of unmapped, ephemeral stone alignments extending up the mountainside in roughly parallel rows. The ground surface between some of these alignments has been cleared of stone.

Lot T Domestic Sites (18WA415 and 18WA416)

Lot T covers the south end of the Elk Ridge and encompasses 107 acres--the largest lot on Maryland Heights. Included within this tract are the famous cliffs overlooking both Harpers Ferry and the confluence of the Shenandoah and Potomac Rivers. The southeast corner of Lot T sits above the west end of the small community of Sandy Hook. With the exception of this corner, most of the lot is comprised of steep, rocky slopes with relatively sparse tree cover. The two domestic sites recorded on Lot T are located in the southeast corner, directly above Sandy Hook (Figure 7.1).

Site 1 (18WA415). Site 1 lies on a narrow, built-up terrace at the base of a deep, narrow ravine that extends in a northerly direction toward the Lot S Domestic Site (Figure 7.22). Most of the site presently sits in a powerline right-of-way, which is cleared of vegetation every two to three years. This right-of-way had not been cut recently at the time of the survey; in addition, past cuttings covered much of the site. As a result, only the central core of the site was cleared and mapped as part of this project.

The main feature in Site 1 is Feature LT-F1, an apparently dry-laid stone foundation surrounding a shallow cellar depression cut into the slope. The interior dimensions of this structure are 16 x 12 ft. An entryway about three feet in width cuts through the center of the east wall. Twentieth-century garbage fills the inside of the feature, and is strewn across the surrounding area.

About seven feet north of the primary structure lies Feature LT-F4, a second, smaller stone foundation with a shallow cellar hole set into the slope. The interior of this three-sided feature is almost square--8.5 x 8 ft. Remnants of a hard, cement-based mortar coated with whitewash cover the interior wall faces. Except for a short wall segment extending south from the northeast corner, the structure is open toward the east.

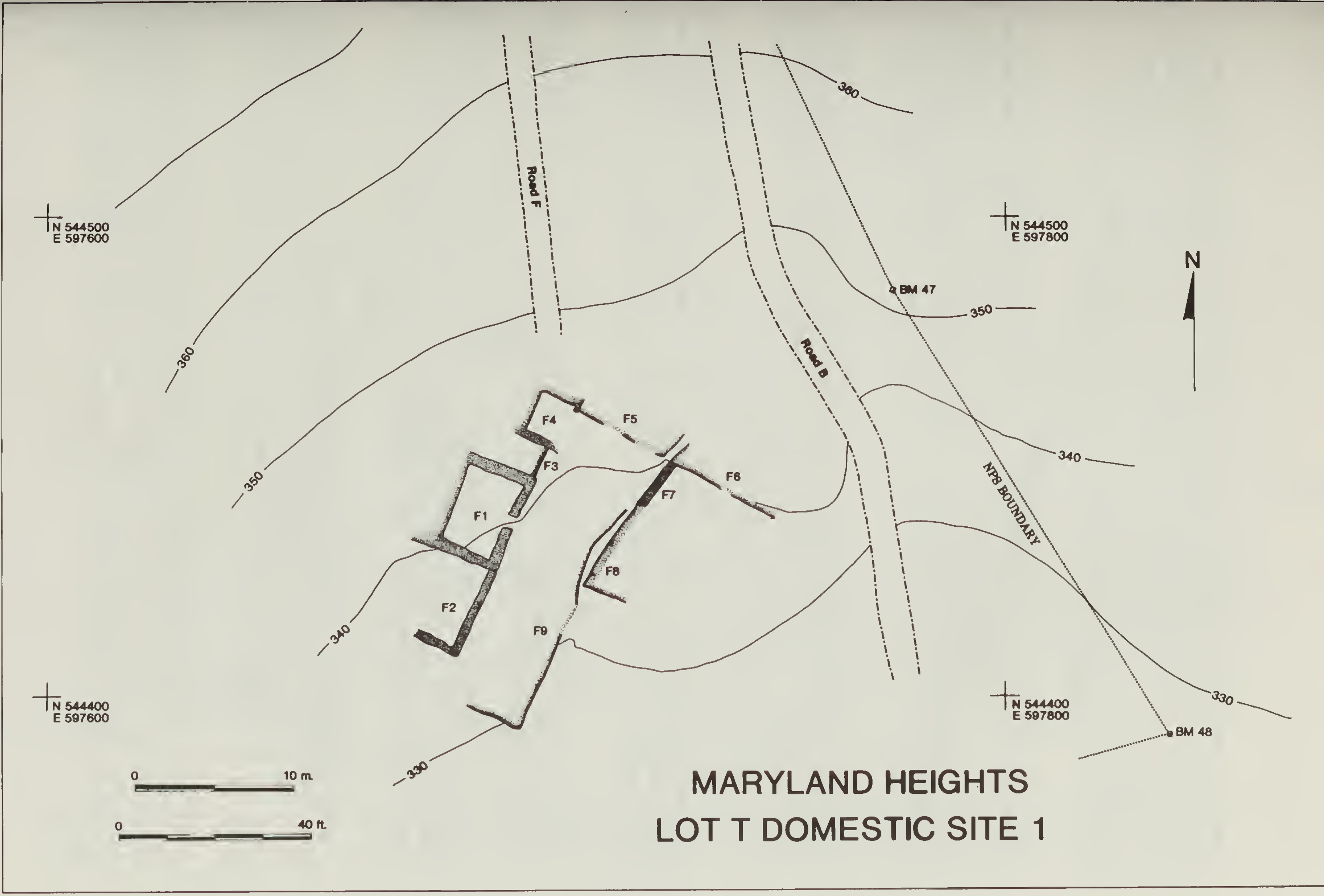

MARYLAND HEIGHTS
LOT T DOMESTIC SITE 1
N
N 544500 E 597600
N 544500 E 597800
N 544400 E 597600
N 544400 E 597800
Road F
Road B
NPS BOUNDARY
BM 47
BM 48
360
350
340
330
F1
F2
F3
F4
F5
F6
F7
F8
F9
0
10 m.
0
40 ft.

Figure 7.22

Wedged between the east side of the two structural foundations is a short, dry-laid stone retaining wall (Feature LT-F3). The wall supports a small, artificially leveled terrace located between the two features. This terrace continues on the south side of Feature LT-F1 as well, where it is supported and defined by a second dry-laid stone retaining wall (Feature LT-F2). Vestiges of whitewash cover part of the east face of Feature LT-F3; no whitewash is apparent along Feature LT-F2.

The terracing system continues along the north side of the site and is defined by Features LT-F5 and LT-F6, two stone retaining walls that extend east-west for a combined distance of about 45 ft. These walls form corners about two feet apart from each other and turn toward the north, creating a narrow channel through which a small stream funnels. Both walls are set in a hard, concrete-based mortar covered with whitewash, and have collapsed in some places.

The water channel continues south of Features LT-F5 and LT-F6. Along the east side of the stream sits a heavily-mortared stone retaining wall (Feature LT-F8). Feature LT-F7, a short, heavily mortared, free-standing wall, perches on top of and bonds with the north end of Feature LT-F8; most likely both form part of the same feature.

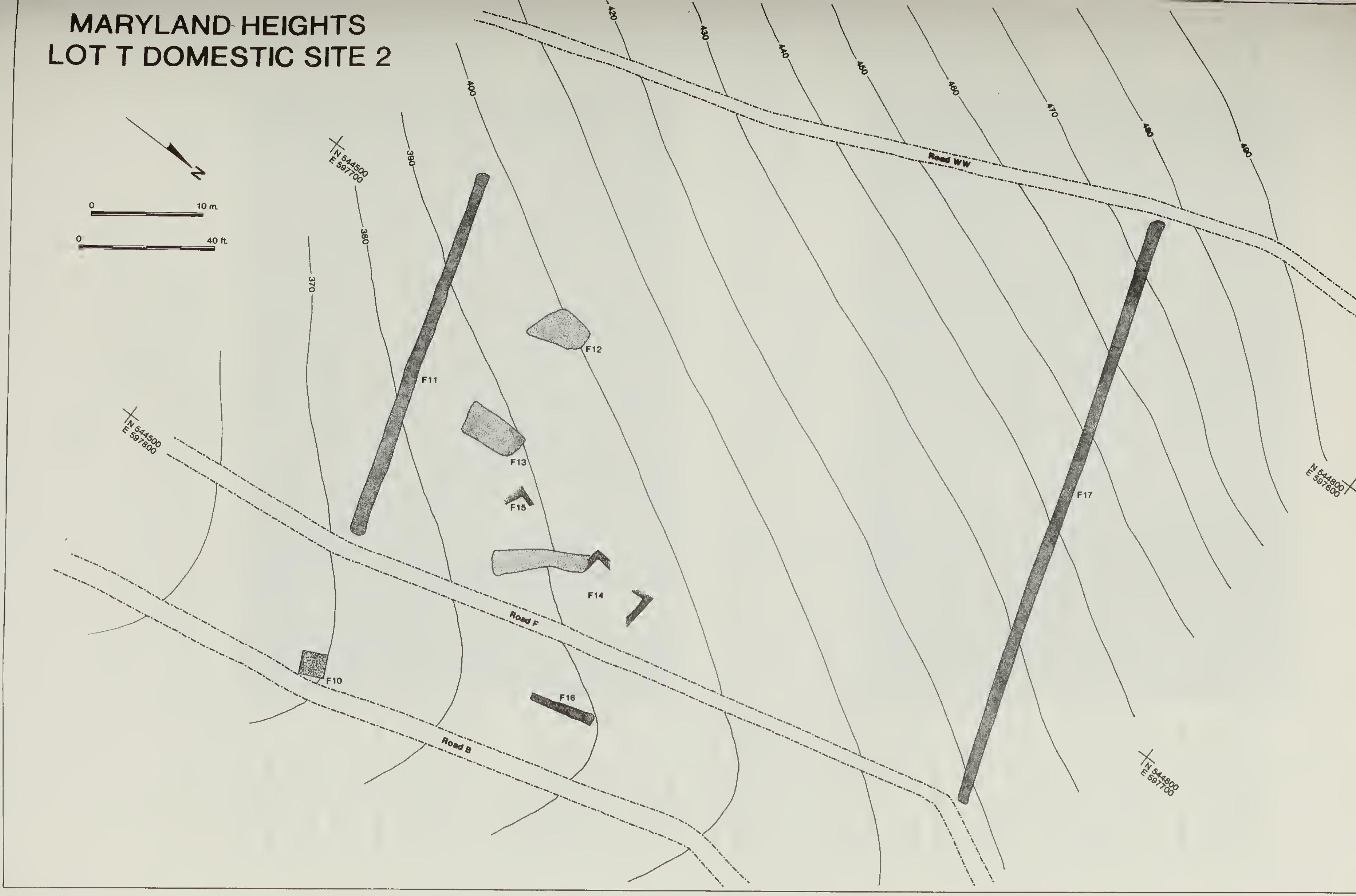
On the west edge of the stream lie the ruins of Feature LT-F9, a substantial, dry-laid stone retaining wall. Both this wall and Feature LT-F8 support leveled terraces in addition to channeling the stream. A large number of once-domesticated daffodils presently grow on these terraces.

Several old flower beds were found on the slope west of the main site complex. Due to the heavy vegetation, this area was not investigated closely, but additional features may be situated along this slope.

Two road traces are associated with Site 1. Road B, the historical Thirty-Foot Reserve Road, extends down the east side of the ravine and fades out in the right-of-way. Road F, on the other hand, follows the west side of the ravine and ends just north of the site.

Site 2 (18WA416). The second domestic site recorded on Lot T lies on the west slope of a deep, narrow ravine about 100 ft north of Site 1. Most of the site sits near the base of this ravine, along a relatively gradual slope. The area presently is covered by tangled secondary growth and brambles.

Two dry-laid stone walls (Features LT-F11 and LT-F17, respectively) define the south and north sides of the site. These walls run somewhat obliquely to the slope (Figure 7.23). Feature LT-F11 extends approximately 110 ft, while the longer north wall runs 180 ft. Although it is apparent that the two fences were constructed with finished wall faces, both presently lie in ruins.



MARYLAND HEIGHTS
LOT T DOMESTIC SITE 2

N
0
10 m.
0
40 ft.
N 544500 E 597700
N 544500 E 597800
N 544800 E 597600
N 544800 E 597700
370
380
390
400
420
430
440
450
460
470
480
490
Road WW
Road F
Road B
F10
F11
F12
F13
F14
F15
F16
F17

Figure 7.23

The east end of both walls terminates at Road F. This road trace extends along the west edge of the bottom of the ravine and effectively defines the east side of the site. A second road trace, Road B, basically parallels Road F along the east edge of the ravine base.

A third road trace, Road WW, defines the western extent of Site 2. This narrow, poorly-constructed road angles up slope toward the northwest. The west end of Feature LT-F17 terminates at Road WW. Within the confines described above, the site encompasses approximately 0.75 acres.

The primary feature of this site is Feature LT-F14, a poorly-preserved stone foundation that encloses a shallow cellar depression cut into the slope (Figure 7.24). The interior dimensions of this structure are 18 x 14 ft. Only the west half of the structure contains substantial wall remnants, which are set in a fine light brown, dirt-based mortar. Both the west and north walls function as retaining walls set into the slope, while the south wall is free-standing. A concentrated rubble alignment extends from the south wall toward the southeast for a distance of roughly 27 ft. Only a hint remains of an east foundation wall, which presently is covered by a thin overburden.

The Feature LT-F14 structural foundation is the only feature mapped on the site aligned with the cardinal directions. In contrast, the walls described above extend basically at right angles from Road F and the stream bed at the base of the ravine.

About 25 ft south of Feature LT-F14 lies Feature LT-F15, a small, ephemeral, dry-laid stone foundation. The interior measures roughly 5 x 4 ft, but the structure originally may have been larger than what presently is visible on the ground surface. The feature consists of poorly-preserved retaining walls along its west and south sides that define a cellar-type depression filled with rubble. No indication exists of stone walls on either of the other two sides. This foundation is not aligned with Feature LT-F15.

On the slope above Feature LT-F15 sit two amorphously-shaped stone piles (Features LT-F12 and LT-F13). Between Roads B and F lies Feature LT-F16, a 20-ft dry-laid wall segment constructed of large fieldstone. Both the east and west faces are finished. This wall lies along the west bank of a small stream that flows through the ravine.

A 6.5 ft-square, poured concrete spring box (Feature LT-F10) sits on the east bank of the ravine. It has a flat top that stands from five to 8.5 ft above the surrounding ground surface, depending upon which corner is measured. This feature most likely dates from a later period than the occupation of the site.

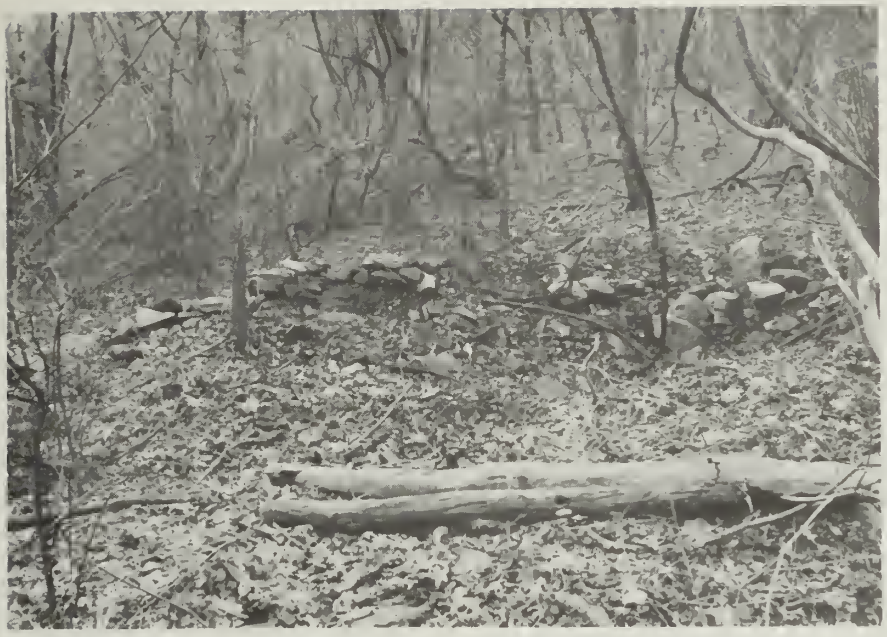


Figure 7.24 Lot T Domestic Site 2. Feature LT-F14, looking west.

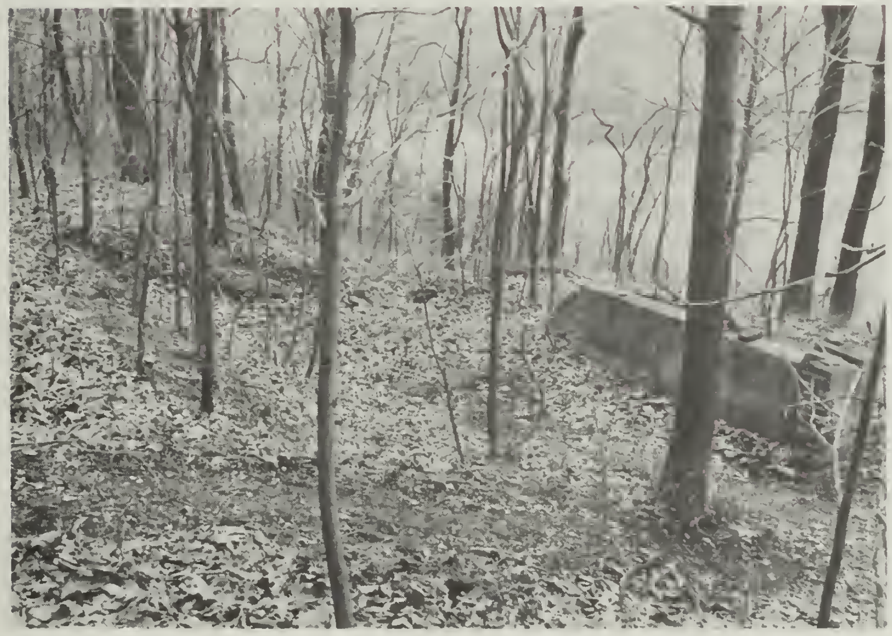


Figure 7.25 Brick and concrete foundation on Lot 146, looking southwest. The main foundation lies along the right edge of the photograph; in the center is a rectangular cut-out area.

Lot 146 Brick and Concrete Foundation

In the southwest corner of Lot 146 stands a small brick and concrete foundation. The foundation sits between Roads U and N at the south end of Road U6L (Figure 7.1). The primary feature is a poured-concrete wall 0.8 ft wide and 12.5 ft long, anchored by heavily-mortared brick piers at either end (Figure 7.25). This brick and concrete wall lies on the west edge of a leveled area measuring roughly 23 x 16 ft and cuts into the steep slope. The remnants of two brick piers stand in the southwest and southeast corners of the leveled area.

A short, steep road trace (U6L) extends from Road U to the site. Along the uphill side of this road are several large stacks of bricks, most of which appear never to have been used.

Stone House Lot (Torres Lot)

The roofless ruin of the stone house presently sits at the base of the steep cliffs overlooking Harpers Ferry. It lies along Harpers Ferry Road a short distance northwest of the railroad tunnel. The exterior dimensions of the structure are 30 x 20 ft. It stands 2 1/2 stories high and originally had a gable roof (Figure 7.12).

The west elevation, which faces the road, has a doorway in the center of both the first and second floors. Window openings flank these doorways. The first story windows measure 5 x 3.5 ft, while the upper windows are smaller. In contrast, the cliff-facing east elevation has no openings cut through it.

Two doorways, one on top of the other, are apparent on the first and second stories of the south elevation. These doorways are situated three feet from the southeast corner of the house. In the attic level directly above the doorways is a small window. In contrast, the north elevation has a doorway in the center of the first level and a window above that on the second story. A very small window opens in the center of the attic level.

In the center of the interior south elevation a stone chimney projects 1.5 ft into the room. The base measures six feet across, with a shallow hearth about three feet wide. Joist sockets are visible between the first and second stories in the west elevation, but not on any of the other sides. A thick slab of concrete presently covers the floor of the building.

Domestic Sites Outside the Park Boundary

When the State of Maryland purchased the lands on Maryland Heights in the 1950s and 60s, a number of small parcels along the base of the mountain were excluded. Reasons for this exclusion varied. In several cases, property owners could not be located. Condemnation proceedings to clear title to these small tracts were considered too expensive, so these lands simply were not included. In addition, some properties along the base of Maryland Heights sat on better quality lands than those which characterized the slopes of the mountain. The State considered these lands as being too expensive for acquisition as well. Finally, arbitrary decisions to exclude certain tracts also were made, based on presently unknown reasoning.[100]

Most of the small tracts excluded from purchase contain nineteenth and early twentieth century domestic sites. Although these sites lie just outside the park boundary, their histories and physical descriptions comprise an integral part of the interpretation of the cultural history of Maryland Heights. In this section, a brief description is given of each site.

King Domestic Site (18WA407). In the southeast corner of Lot J lies a small, one-acre tract known as the King property. The east end of the parcel fronts the primary dirt road (Road A) that extends along the base of the east flank of Maryland Heights. The land is characterized by rocky slopes covered with secondary growth.

The ruins of two log structure occupy the far northeast corner of the plot (Figure 7.1). The larger of the two sits above the west edge of the road. This building has exterior dimensions of 20 x 14 ft and is constructed of hewn logs (Figure 7.26). Along its east elevation the log superstructure rests on a dry-laid stone foundation two feet in height. The west side, on the other hand, is constructed into the dirt slope.

The ends of the logs have either very shallow, flat notches, or no notches at all; they appear to be held together by a large number of wire nails. The gaps between the logs are filled with wood shakes set at an angle. A thick mud daubing, coated with a thin veneer of cement, covers the chinking. Several of the logs appear to have been salvaged from another structure as they contain notches in them that are not functional to this building.

A three-foot-wide doorway cuts through the east elevation of the structure,three feet from the northeast corner. Three feet from the southeast corner, in the same elevation, is a window. Above the doorway and the window lie two additional, smaller windows. A first-floor window occupies the center of both the north and south elevations. Along the west elevation, another doorway lies directly opposite the entryway in the east elevation.

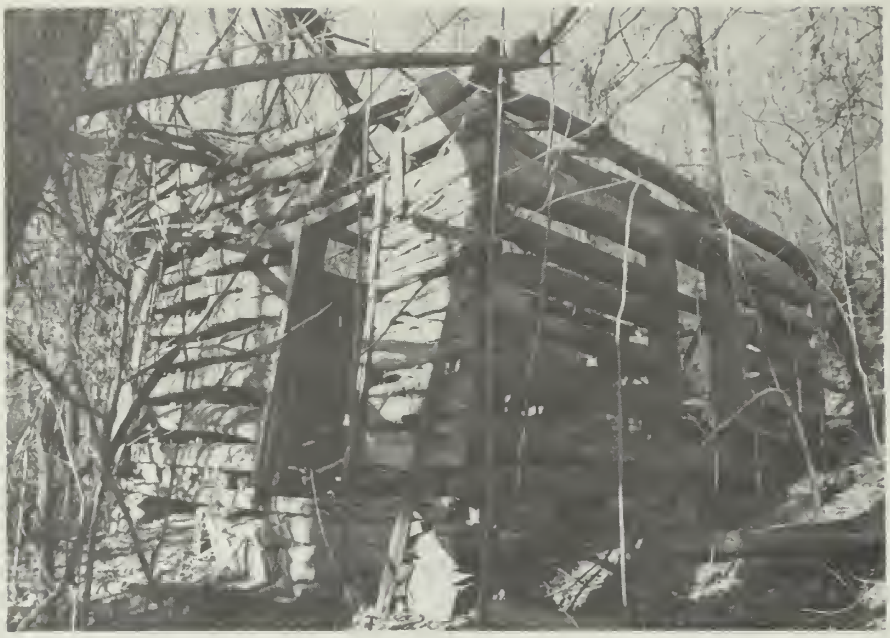


Figure 7.26 Lot J. Ruins of log house on King Site, looking southeast.

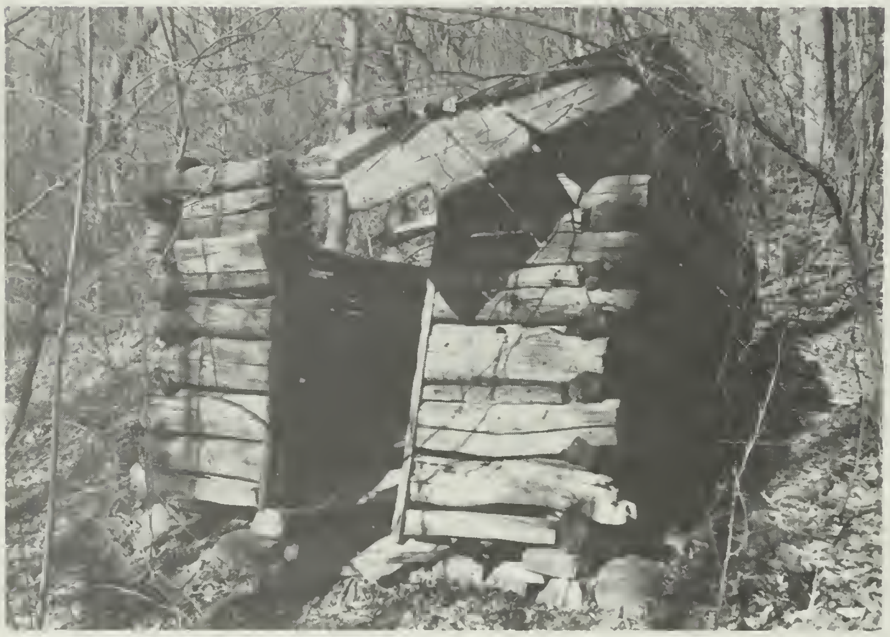


Figure 7.27 Lot J. Ruins of small log structure on King Site, looking west.

The structure stands 1 1/2 stories high. The first floor appears to have been divided into two rooms of roughly equal size. Tongue-and-groove wood panelling is evident on the interior of the south wall. Both the second story floor and the roof have collapsed into the center of the house.

A short distance northwest and uphill from the first structure stands the second log building. This smaller structure measures 10 x 9 ft and is constructed of hewn logs with a variation of V-notching on their ends (Figure 7.27). The spaces between the logs apparently were filled with long, narrow pieces of wood, but only remnants of these have survived. Several of the logs show signs of previous usage as part of a different structure.

The east elevation of the smaller building sits on a dry-laid fieldstone foundation just under one foot in height. The west end cuts into the slope. In the center of the east elevation is a doorway three feet wide. No openings exist in the other three sides. The interior is comprised of a four-feet deep square hole lined on all four sides by a stone retaining wall. The north retaining wall has partially collapsed. At the beginning of the project, the structure had a gabled roof of weatherboard covered with asphalt shingles. Sometime between the spring of 1986 and the early part of 1987 this roof collapsed into the interior of the building.

Easton Domestic Site (18WA409). The Easton Site lies in the extreme northeast corner of a one-acre tract carved from the east end of Lot N (Figure 7.1). The eastern edge of this small parcel borders the primary road (Road A) that extends along the east base of Maryland Heights. The surrounding terrain consists of a gradual slope covered with young, secondary growth. Several springs flow through the property; a short distance north is a small, perennial stream that empties onto the road.

The main component of the site is a three-sided stone foundation open to the west and measuring 21 x 16 ft (Figure 7.28). The stones are set in a yellowish brown, dirt-based mortar. Along its east side the foundation stands two feet high. On this side is an apparent four foot wide entryway that begins four feet from the northeast corner. The interior of the structure consists of a leveled depression cut into the slope.

Eighteen feet west of the stone foundation stands a three-sided, dry-laid, stone retaining wall. The center section of this wall is 23.5 ft long, but it has collapsed in the middle. Two short wings about nine feet in length extend toward the east from each end of the main section. Between the retaining wall and the stone foundation the artificially-leveled ground surface is cleared of stone, unlike the ground surface outside this enclosed area.

Along the west edge of the road sit remnants of a dry-laid, stone retaining wall that supports the terrace upon which the stone foundation is constructed. About 60 ft. south of the foundation lies a deep, circular-to-square depression of unknown function that measures four feet deep and 12 ft in diameter. Between this depression and the main foundation is a leveled area roughly rectangular in configuration. Many

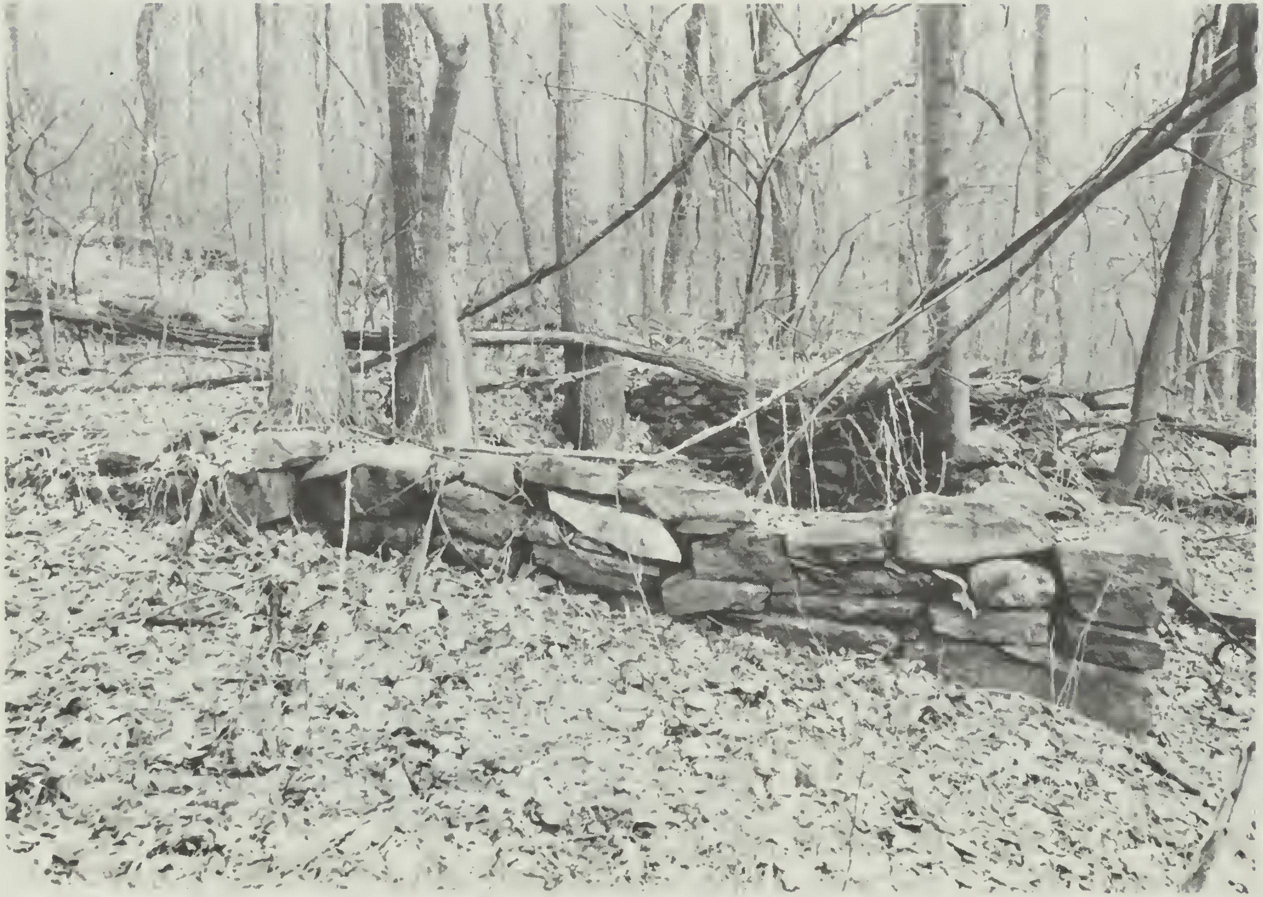


Figure 7.28 Lot N. Stone foundation on the Easton Domestic Site, looking north.

stone piles lie on the slopes behind the main part of the site; the ground surface surrounding these piles has been fairly well cleared of stone.

Grove Domestic Site (18WA410). The Grove Site occupies the southeast corner of Lot N and sits on a 1 1/2-acre tract (Figure 7.1). Like the other domestic sites on the east side of the mountain, this lot borders Road A on its east side. The terrain is relatively level along the road, but steepens progressively to the west. Secondary growth covers the area.

The primary feature is a massive stone foundation measuring 53.5 x 31.5 ft along its outside corners (Figure 7.29). The exterior walls are 2.5 ft wide and set in a yellowish brown, sandy mortar, as are all the walls in this structure. In the center of the west exterior wall the foundation projects outward to form a 14 x 7.5 ft rectangle. Although the ground surface around the site basically is free of stone, a concentration of stone rubble surrounds this projection. No obvious entryways cut through the structure.

A stone pier 6.7 ft high and four feet square is integrated into the exterior southeast corner. In the south half of the structure stands a larger, free-standing stone pier 9.5 ft square and slightly more than four feet high. A short distance north of this massive pier, near the center of the building, sits a smaller free-standing pier in collapsed condition measuring 3.5 x 3 ft.

Two stone walls extend through the interior of the building. The first parallels the east exterior wall at a distance of 12 ft; the second parallels the north exterior wall at the same distance. These two internal walls tie in to the exterior south wall and the exterior west wall, respectively. They also join with each other, enclosing a space roughly 35 x 18 ft in size, excluding the west projection.

The interior faces of the two walls are fairly-well preserved, while most of their exterior sides have collapsed. A heavy concentration of stone rubble about 4.5 ft wide extends along the exterior side of the east internal wall. Near the north end of the east internal wall a wall remnant extends perpendicularly toward the east. This remnant disappears under mounded rubble after a short distance.

The north internal wall also has a wall remnant extending perpendicularly from it that mirrors the wall extending from the east internal wall. The wall remnant associated with the north internal wall extends 3.5 ft before turning westward as part of a well-preserved corner that collapses into rubble after a very short distance.

A built-up earthen platform measuring roughly 18 x 12 ft along its top edge extends off the east side of the feature. A short distance southeast of the main foundation lies a vaguely rectangular-shaped depression about 14 x 12 ft in diameter and several feet deep.

GROVE DOMESTIC SITE

LARGE STONE FOUNDATION

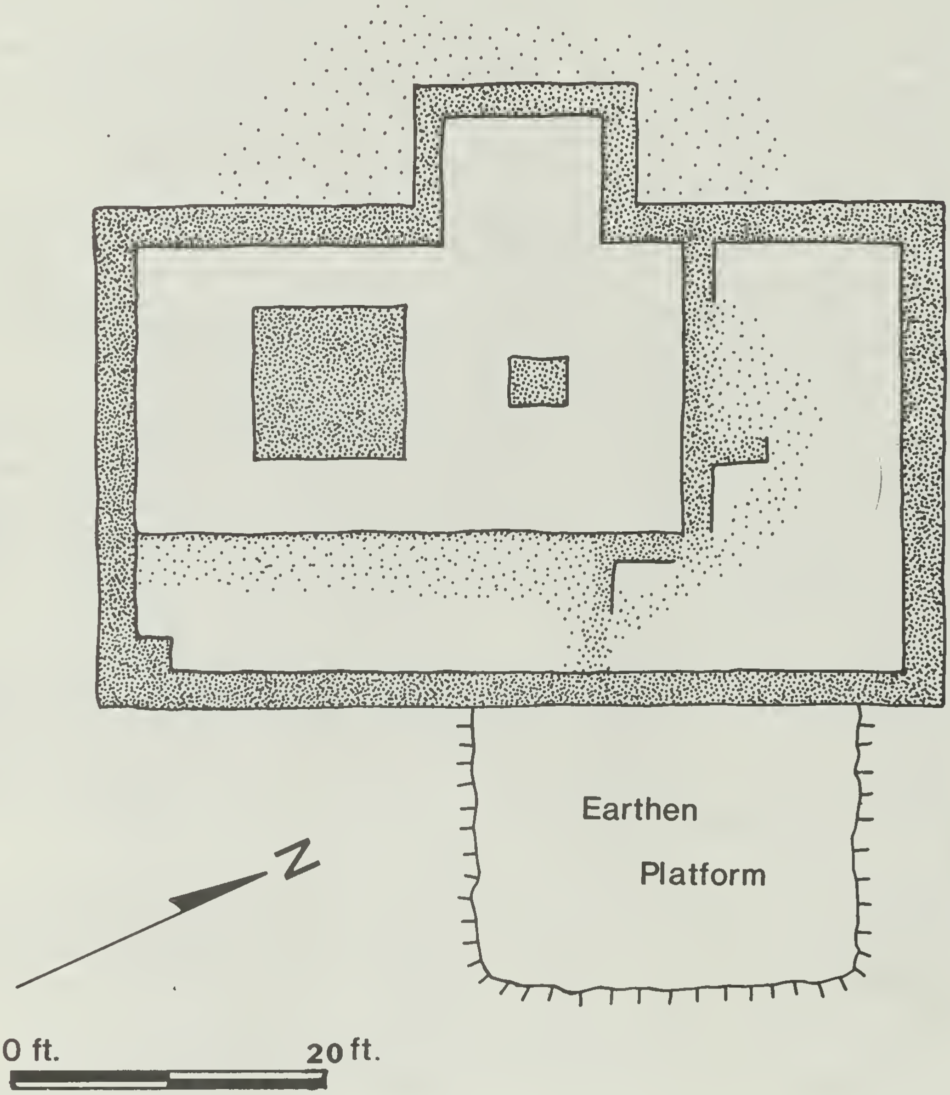

Earthen
Platform
N
0 ft.
20 ft.

Figure 7.29

Powers Domestic Site (18WA411). The Powers Site is located at the eastern-most end of Lot O on a three-acre parcel (Figure 7.1). The site sits on a moderate slope in an area cleared of most surface stone. The tract presently is overgrown with secondary forest growth.

The primary feature is an almost square (16 x 15 ft) depression cut into the side of the slope. Stone rubble lines the top edges of the depression, particularly along its south edge. The east side of the depression lies almost level with the ground surface. An opening through the rubble on this side is suggestive of an entryway.

West of the depression lie stone alignments and piles that may be the ruins of outbuildings and/or the product of stone clearing.

DOMESTIC SITES INTERPRETATION

Domestic occupation of Maryland Heights began shortly after the subdivision of the Antietam Iron Works in 1848, and continued well into the twentieth century. The first part of this interpretive section documents sites within the National Park Service boundary, the second covers those on the east flank that lie just outside the park. The latter excludes Lot L, as the site has been impacted heavily by construction of a modern house.

This interpretive section concentrates on defining dates of occupation and identifying individual features. It combines physical evidence recorded during fieldwork and historical documentation from courthouse records with other sources, such as maps and oral histories, to provide a physical history of the domestic sites. A separate Summary and Conclusion provides a broader overview of domestic settlement on the mountain.

Domestic sites within the National Park Service Boundary

The decade spanning the initial sale of the Antietam Iron Works lots and the commencement of the Civil War witnessed the development of a number of small farms on Maryland Heights, particularly along its east flank. On this side, these sites concentrated along the east ends of the lots, above a primary road laid out by the Iron Works and known as the Thirty-Foot Reserve Road.[101] Far fewer domestic sites were constructed on the west side of the mountain, and all of these sat above Harpers Ferry Road. Discussion below focuses on the individual sites within the park boundary, beginning with Lot K and moving southward down the east flank.

Lot K. One of the earliest, if not the earliest, of the small farms stood on Lot K. Two men, Edward Evans and John Ault Norris, purchased the 22-acre lot on the last day of December, 1850. John Ault Norris gained total possession when he bought the south half from Evans in 1855; however, the division of Lot K into two equal halves remained, as reflected throughout its documented history and by the present-day archeological ruins (Figure 7.13).[102]

John Ault Norris and his family lived on Lot K during the Civil War. An 1863 military map detailed the lay out of the farm at that time (see right edge of Figure 5.5). This map shows a cluster of three buildings surrounded by a fence along its south, east and north sides. No fence encloses the uphill, or west side. Just south of the fenced-in cluster lies an isolated structure on the north side of a major road extending down the east side of the mountain.

The isolated structure creates some confusion in interpreting the 1863 map, as it is difficult to determine whether it falls within the boundary of Lot K or neighboring Lot L. Comparing the quite accurate configuration of the road shown on the 1863 map with the present road trace labelled Road H (Figure 3.7), two possibilities become evident. The first is that the historical road travelled past the extreme southeast corner of Lot K, putting the isolated building on Lot L. On the other hand, the road could have extended through the southeast corner of the tract, making the structure part of Lot K.

The archeological map of Lot K more closely aligns with the latter possibility. The east fence on the 1863 map measures about the same length as Feature LK-F1, the stone retaining wall forming the east boundary of the north half of Lot K.[103] Features LK-F3 and LK-F4 match the north and south fences, respectively, that appear on the historic map.

Viewing the 1863 military map, therefore, it appears that occupation on the Lot K Domestic Site was divided into two halves from an early period. The isolated building in the south half probably corresponds to Feature LK-F28, identified as a small dwelling, or its predecessor. Edward Evans could have constructed this structure as early as 1851, shortly after the purchase of Lot K from the trustees of the Antietam Iron Works.

In the north half of the site, the small structure constructed against the north fence probably represents Feature LK-F8, the stone foundation of a building identified as a stable in a deed filed several decades later.[104] The structure a short distance to the southwest of the stable most likely forms part of Feature LK-F6, the dwelling house on this half of Lot K. The final building may be Feature LK-F5, a small stone foundation described in later accounts as a smokehouse.

The Norris family continued living on Lot K after the Civil War. In an 1877 atlas of Washington County, Maryland, Daniel Norris, a son of John Ault Norris, lived in the house on the north half of the property, while his mother, Elizabeth Norris resided in the south half (Figure 7.4). John Fenton Norris and his younger brother William Ault Norris shared the south half of the site with their mother during this period.[105]

Daniel Norris continued living on the north half of Lot K until around the turn of the century, when his brother William moved in with his young family. Upon her death in 1900, Elizabeth Norris willed her residence and 11 acres to her son John Fenton Norris.[106] In 1904, a few years after Elizabeth's death, John Fenton Norris constructed a larger house on the south half of Lot K about 15 ft east of the older dwelling. This new house corresponds to Feature LK-F27, an ephemeral stone foundation measuring about 20 x 16 ft. According to Harold King, this house was constructed of log, two-stories high, with two rooms on each level. Gingerbread-type trim decorated the exterior.[107] The heavy concentration of brick on the ground surface may have come from a chimney along the south side of the structure.

The old house (Feature LK-F28) remained standing and in use after the new one was constructed. The entrance to the main floor of this building lay on its west side at ground level. On the east side was an entryway into a shallow cellar hole. This cellar functioned as a carpenter shop and laundry.[108]

William Ault Norris was living in the house on the north half of Lot K (Figure LK-F6) at the time of his death in 1910. His young widow, Myrtle, remained there for several years with her two small children. Around 1920 she married Everett Himes and moved to Williamsport, Maryland. After Myrtle Norris left the property, the house was not lived in again and allowed to fall down.[109]

The foundations of the dwelling on the north half of Lot K (Feature LK-F6) reveal that it was constructed in two sections: a west half with dimensions of 18 x 17 ft, and an east side measuring 20 x 15 ft. Without archeological investigations, however, it remains unknown whether the two sides were constructed at different times, or which was built first. Both sections originally had large, stone chimneys.

John Fenton and Genie Norris moved from their house on the south half of Lot K shortly before Genie's death in 1925. The house was occupied for a short period by a tenant, but after 1930 was allowed to decay and fall down.[110]

Norris family descendants believe that Genie Norris was buried on Lot K in a small family cemetery located in the northeast corner of the south half of Lot K, just above the road. Harold King, who grew up on neighboring Lot J, identified two cemeteries on the property, one at that corner, and a second on a terrace above Feature LK-F22, a stone embankment. While mapping Lot K at least two possibly planted stones were noted at this second vicinity, although not plotted at the time as their function was unknown. No traces remain of a burial plot near the road; it is possible that a combination of road bulldozing and erosion may have removed it.[111]

Apparently, John Fenton Norris also wished to be buried on Lot K. Shortly before his death, he had a stone brought down from the mountain to be used as his headstone, but relatives interred him in a cemetery in Keedysville, Maryland, instead.[112]

Other structural features recorded in the north half of Lot K have been identified by Harold King. Feature LK-F8, a stone foundation described as a stable in the mid to late nineteenth century, was used for buggy and harness storage in the first decades of the twentieth century. Feature LK-F17, another stone foundation, functioned as the stable in the early 1900s. Next to the main house stood a stone "meathouse" or smokehouse (Feature LK-F5).[113]

The south half of Lot K divides into a series of narrow terraces upon which crops, in particular corn, were grown. The north half, in contrast, does not have a defined terracing system. The upper section of this north half, above Feature LK-F13, is extremely steep, yet confined by remnants of a barbed wire fence on its west side and stone walls along the others. This area probably was used for pasturage, and crops for the north half of Lot K grown in the small level area above Road A.

Lot P. On a detailed military map dating from 1865 (Figure 7.30), a structure is shown at the location of Feature LQ-F21, a small foundation measuring 22 x 14 ft and situated in the extreme southeast corner of Lot P. Interestingly, the structure on the historical map and the present-day ruin both are skewed to neighboring Lot Q and the roads, suggesting that the feature may date to that period (Figure 7.16). The ill-constructed stone wall (Feature LQ-F18) defining the west end of the Lot P Domestic Site is not represented on the 1865 map.

The building does not appear on an 1862 photograph that shows the east flank of Maryland Heights at a distance, although it may be obscured by trees (Figure 7.31). The photograph does show that the lower third of Lot P was open, probably as a meadow.

The early history of Lot P remains unclear. Although Thomas Boteler purchased the tract in 1850, nothing more is recorded concerning Lot P until the twentieth century. Thus it is not known who lived in the house before and during the Civil War.

The house does not appear in the 1877 Atlas of Washington County, suggesting that it had been abandoned by that date (Figure 7.4). A 1910 United States Geological Survey map also shows no buildings on Lot P (Figure 7.32). By that date, Roy Johnson was paying taxes on the tract, classified as mountain land with no improvements. Apparently the lot had been held by his family for a number of years. No physical evidence exists of any structures constructed on the property in the twentieth century.[114]

Lot Q. The Dearing family owned Lot Q from 1848 to the turn of the century. While Elias Dearing purchased the tract for $48.64, he and his wife Lucinda sold it for eight times that amount to their nephew George T. Dearing in 1852, a short four years later. This suggests substantial improvements had been made to the property by that date. By the time of the Civil War, Lucinda Dearing had received sole possession of Lot Q.[115]

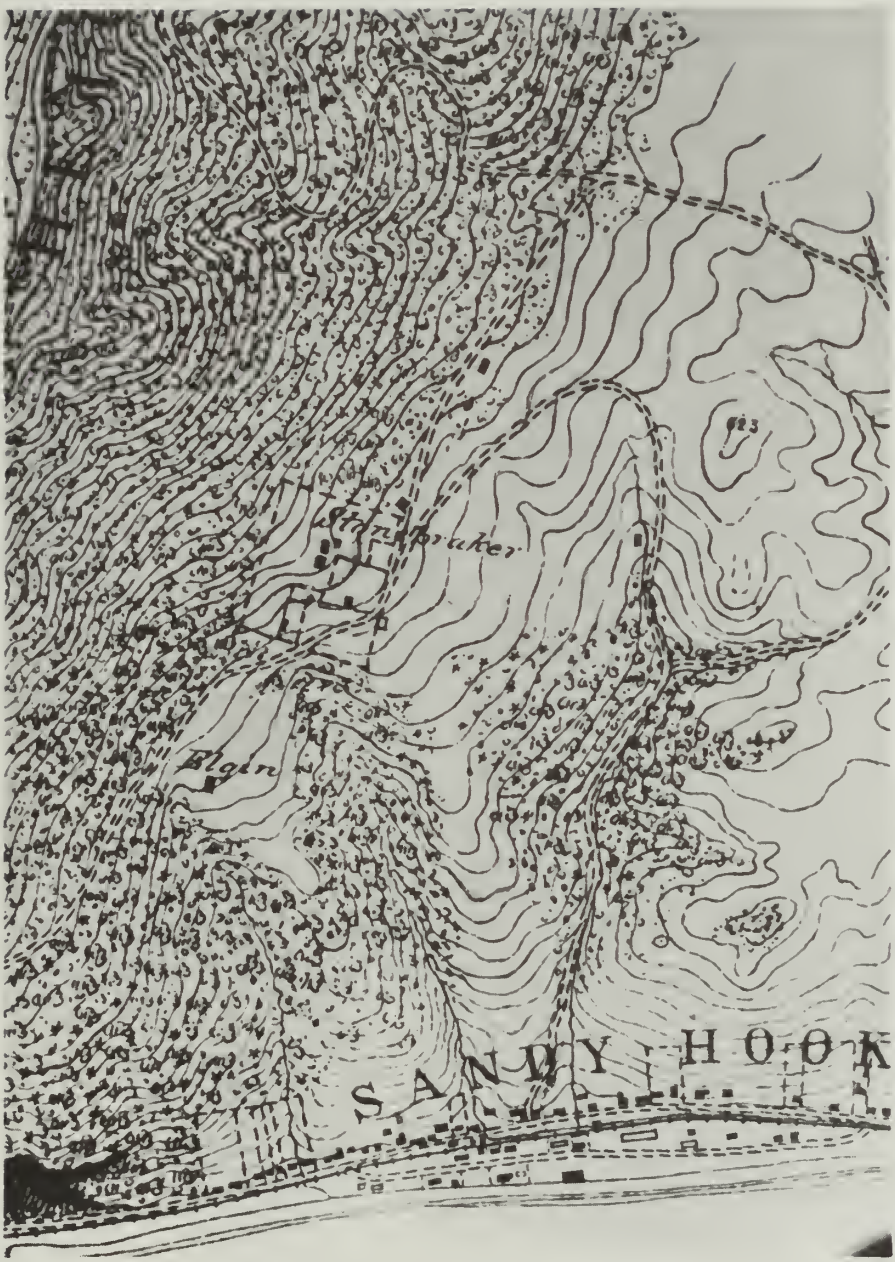

Stonebraker
Elgin
SANDY HOOK

Figure 7.30 Detail of 1865 Donn map showing domestic sites on east flank of Maryland Heights. North toward top of map. (Harpers Ferry NHP)

Figure 7.31 1862 photograph of east flank of Maryland Heights. Near the right edge of the photograph lies the Lot Q domestic settlement, while Sandy Hook appears on the far left side. (Harpers Ferry NHP).

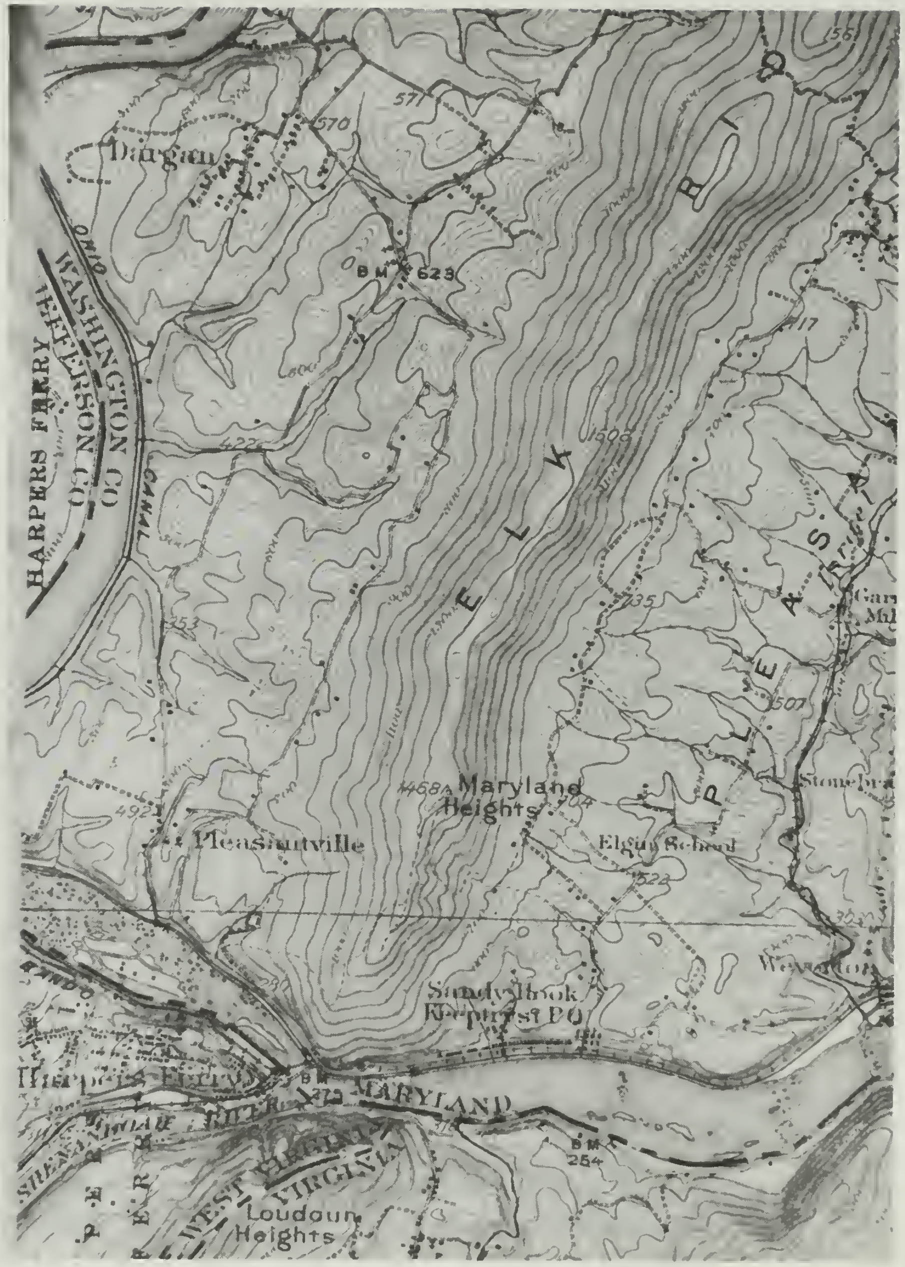

Dargan
570
571
B M 623
OHIO
WASHINGTON CO
JEFFERSON CO
HARPERS FERRY
CANAL
422
1500
E L K
R I D
335
507
P L E A S A
1468 Maryland Heights
704
Pleasantville
Elgin School
522
492
Sandy Hook
Harpers Ferry P.O.
Harpers Ferry
MARYLAND
SHENANDOAH RIVER
WEST VIRGINIA
Loudoun Heights
B M 254

Figure 7.32 1910 USGS map, Harpers Ferry quadrangle. Detail of Maryland Heights area.

Several sources dating from the Civil War era depict Lot Q. The most important of these is the 1865 Coast and Geodetic Survey map (Figure 7.30), which shows buildings and fence lines on the property that correspond closely to the archeologically-recorded foundations and stone walls (Figure 7.17). Curiously, the property is labelled on this map as belonging to a member of the Stonebraker family. In addition to the 1865 map, the Civil War-era photograph introduced above shows several buildings on the property (Figure 7.31).

On the historical map, a road passes through the southeast quadrant of the farm in the same location as Road A. Above the road sits a building at the same location as Feature LQ-F8, a large depression (26 x 20 ft) with a mounded apron on its downhill side. In the 1862 photograph this structure is depicted as a 1 1/2- to two-story dwelling with gable roof.

Above and to the right of the structure in the photograph stands a second building. Although obscured somewhat by trees, it appears that the building has a gable roof. This upper structure most likely was a house, and corresponds to Feature LQ-F14, an ephemeral foundation with approximate interior dimensions of 18 x 12 ft and situated on a leveled terrace. On the historical map, it appears as one of two buildings located side by side; the second building apparently has left no above-ground traces. A small structure a short distance northeast of the two buildings may correspond to Feature LQ-F16, a leveled platform/shallow depression measuring 12 x 8 ft and cut into the slope.

A third building appears in the photograph uphill and slightly to the left of the first building. This structure appears to sit at the same spot as Feature LQ-F6, a 16 x 14 ft rectangular stone foundation. The 1865 map shows a small, outlined building in this general vicinity. That structure, however, is constructed against a fence (possibly part of Feature LQ-F3) and may actually be part of Feature LQ-F5, which is too small for the building shown in the photograph.

On the map a structure also appears near the south edge of the property, against the east side of a fence identifiable as Feature LQ-F3 or its predecessor. This building does not appear in the photograph, but it may be hidden by trees. No above-ground traces are evident of this structure.

Almost all of the Lot Q Domestic Site was cleared at the time of the Civil War, as depicted both on the 1865 historical map and in the photograph. In the latter, a road (Road B) extends north-south along the east edge of the site, with cleared areas both above and below it. Those lands on the east side of the road comprised parts of Lots U and V. Elias Dearing owned Lot V, upon which he had constructed a stable.[116] This stable most likely is the structure outlined on the map at the east end of the site, below a fence line corresponding to the location of Feature LQ-F1. Part of the building may appear in the photograph, below the building located at the site of Feature LQ-F8, but it is partially hidden by a tree.

Elias Dearing died in 1869 "at his residence near Sandy Hook"--possibly on Lot Q, or lower down on Lot V. All records indicate, however, that his wife Lucinda held title to Lot Q, which she never transferred to anyone else in the family. Interestingly, according to court records filed shortly after his death, Elias Dearing did not leave a widow or any children. This suggests that Lucinda died sometime before 1869; Lot Q remained in the possession of the estate of Lucinda Dearing, however, well into the 1890s, at which time it was sold at public auction for nonpayment of taxes.[117]

According to local tradition, prior to the Civil War a community known as Deeringtown was located on the east flank of Maryland Heights above Sandy Hook.[118] It is likely that this community corresponds to the Dearing settlement on Lot Q and neighboring Lot V, with its apparent cluster of dwellings. A road extended from Sandy Hook to Deeringtown through Barnhardt's Hollow, a narrow ravine between the park boundary and Clark Road.

A house appears in the vicinity of Lot O in the 1877 atlas with the label "Est. of E. Daring," implying that someone, perhaps a member of the family, was still living on the property at that date (Figure 7.4). No roads lead to that dwelling, however, nor to any of the other houses along the east flank of the mountain (i.e., the Norrises and the Groves). Since it is not included, Road A most likely was nothing more than a narrow dirt track at that time.

After 1892, whomever comprised the estate of Lucinda Dearing stopped paying taxes on Lot Q. In 1896 the tract was offered at public auction and purchased by Patrick Higgins for the small sum of $90.[119] The fact that taxes had been paid into the 1890s implies that Lot Q was occupied at least up to that date. The minuscule amount paid by Higgins also suggests, however, that the property was run down and probably abandoned by the time of the sale.

Shortly after acquiring Lot Q, Higgins divided two one-half-acre parcels from the lot and sold them to family members.[120] This combined one-acre tract lay in the extreme southeast corner of the property. The outlines of this conveyance are echoed by Feature LQ-F3, a stone wall that lies a short distance to the west. No above-ground archeological evidence exists of any structures having been constructed on the one-acre tract, which presently lies outside the National Park Service boundary.

No buildings appear at the location of Lot Q on the 1910 USGS survey map (Figure 7.32), which suggests the property had been abandoned by that time. In a tax assessment from that year, Patrick Higgins is listed as owning four lots, each with a house on it. It cannot be ascertained whether any of these are from Lot Q, but no mention is made of land attached to them, which should have been the case for a tract as large as Lot Q. With no further evidence available, it is highly likely that the lot was abandoned by 1910, and perhaps was never occupied at all under Higgins' ownership. Following Higgins' death in 1915, the tract remained in his estate until acquired by the State of Maryland.[121]

Lot S. The 1865 map (Figure 7.30) shows a large structure in the vicinity of the Lot S Domestic Site. This building corresponds to Feature LS-F6, a substantial stone foundation measuring 30 x 22 ft (Figure 7.20). None of the stone walls mapped on Lot S are shown on that historical map, although a cleared area is depicted around the building. A tree unfortunately blocks any view of Lot S in the 1862 photograph (Figure 7.31).

Historical documentation of Lot S is scanty prior to the Civil War. The lot belonged to a single family, the Clauges, from 1853 to 1874. Curiously, the 1865 map shows the building as belonging to or being lived on by an Elgin, but a member of that family never held title to this property.

The 1877 Atlas does not show a dwelling on Lot S (Figure 7.4). However, the owner of the property at that time, Sarah E. Chidlow, sold the tract to Edwin E. Carpenter in 1879 for the large sum of $900, even though she had purchased it just five years earlier for only $204.[122]

When Lot S was sold at public auction in 1895, the house no longer existed. According to the advertisement for the sale, Lot S consisted of "a tract of mountain land lying west of and near Sandy Hook on the east side of Maryland Heights."[123] Apparently, no additional structures were constructed on the tract after that date, for no buildings appear at this location on the 1910 USGS survey map (Figure 7.32).

Lot T. Of all the domestic sites recorded on Maryland Heights, least is known about the two on Lot T, located directly behind Sandy Hook. Augustin A. Biggs, a doctor from Sharpsburg, and Lewis Watson initially purchased the large tract, but conveyed it to Patrick C. Savin a year after the Civil War ended. Lot L remained in the Savin family until acquired by the State of Maryland in 1962.[124]

The two sites identified on Lot T do not appear on any of the military maps of Maryland Heights, nor do they appear in the 1877 Atlas of Washington County or the 1910 USGS survey map. All extant tax assessments from 1896 into the 1940s reveal that no improvements existed on the property.

So when were the two sites on Lot T occupied? The hard, cement-based mortar used on several of the features at Site 1 suggests that this site was in use some time subsequent to the late nineteenth century. The substantial remnants of whitewash also point to a later date of occupation. The hard mortar and whitewash, of course, do not necessarily indicate when the site was constructed, just that at some later date it may have undergone renovation.

On Site 1, a tremendous amount of effort was put into terracing and landscaping the grounds with a series of stone retaining walls. These walls also channel a small stream through the center of the site. Several old flower beds lie on the slope above the main foundation (Feature LT-F1). This foundation, with interior dimensions of 16 x 12 ft, most likely comprised the cellar of a dwelling of unknown size and configuration that once sat above it. Feature LT-F4 probably served as the cellar to another, much smaller structure.

Lot T Domestic Site 2 is even more enigmatic than the first, with no indication as to its construction date. The main feature on this site, LT-F14, consists of an ephemeral stone foundation with interior measurements of 18 x 14 ft. This structure could have functioned as a house, or perhaps as a barn or outbuilding for nearby Site 1. The fact that the foundation is aligned with the cardinal directions, and that the stone fence lines are not, implies that they may have been constructed at different times. The walls enclose an area cleared of most surface stone, suggesting the slopes' possible use for pasture. The ground slopes too steeply for agricultural use, and has not been terraced.

In the southeast corner of the site stands a concrete spring box (Feature LT-F10) no longer in use. This spring most likely served a number of families in Sandy Hook at some point in the present century.

Lot 146. Samuel Kilham, an armory worker in Harpers Ferry, constructed a small farm on Lot 146 between 1855 and the beginning of the Civil War. Following Kilham's death in 1863, the property was described as "improved with a log house in bad repair and some small log outbuildings which do not amount to much, about seven acres all under indifferent fencing and that there is very little timber."[125]

The farm appears on military maps produced during the War. Both the 1863 Michler map and the 1865 Coast and Geodetic survey map place a building at the location of the dismantled Youth Conservation Corps (YCC) camp. The former situates the structure on the east side of a road no longer in existence that once connected Roads K and Q (Figure 5.5). The 1865 map depicts a structure on the left side of the intersection of Roads K and U1L (Figure 7.33). On both maps the building lies the same distance northeast of the Naval Battery. This structure has left no above-ground traces, and may have been at least partially disturbed by construction of the YCC camp in the mid 1970s.

A Mrs. Buckles lived in the house during the Civil War. A Rhode Island soldier stationed on Maryland Heights in the summer of 1861 noted a compatriot

> had spotted a very neat little log farm house quite near our camp, and engaged suppers for us. We found a very neat-looking hostess with the romantic name of Buckles, waiting tea for us. . . . We made arrangements for our board while we staid (sic) here, and have been living there ever since."[126]

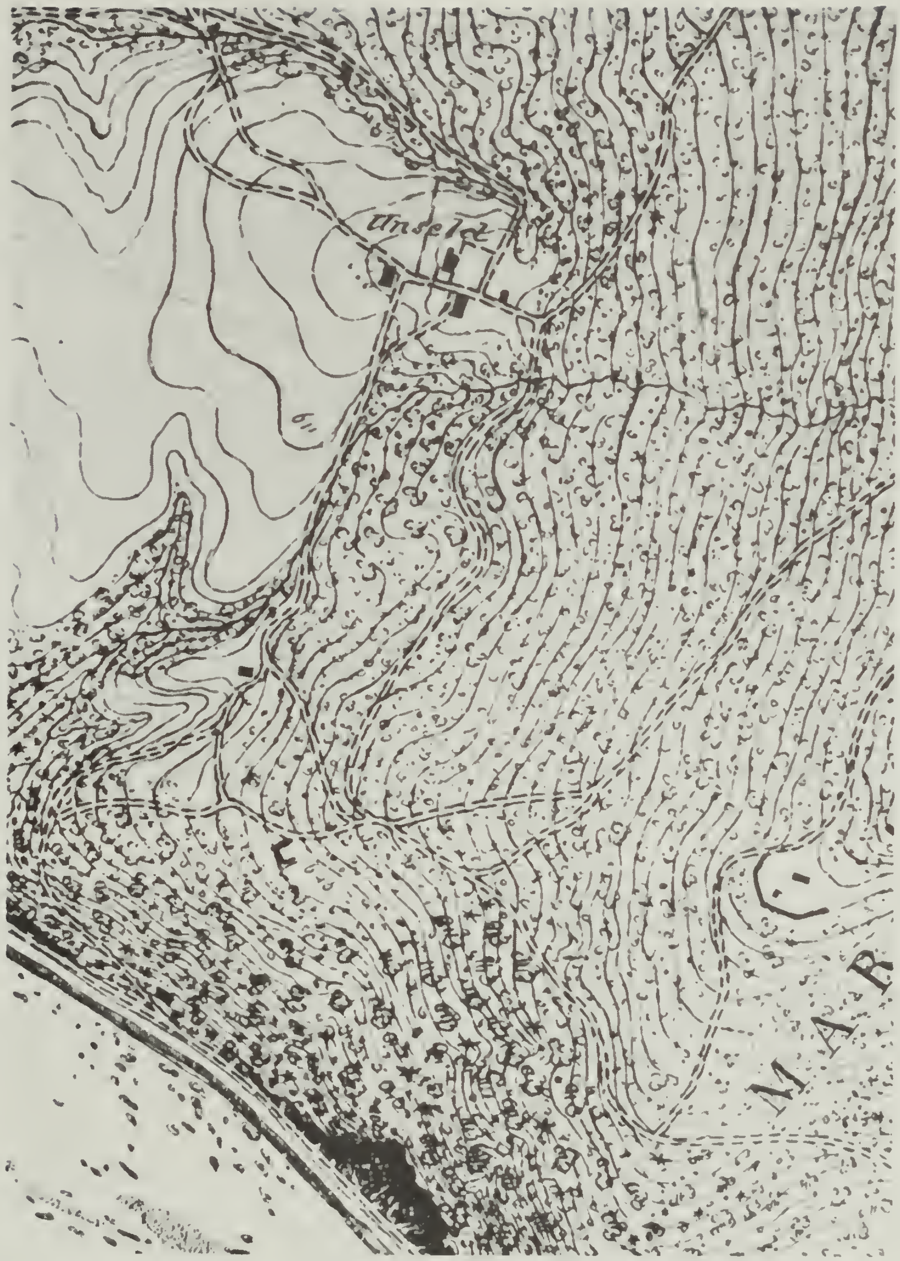


Figure 7.33 Detail of 1865 Donn map showing domestic sites on west flank of Maryland Heights. (Harpers Ferry NHP)

In 1862, Colonel Ford used Mrs. Buckles house for his headquarters. Testimony following the capture of Harpers Ferry in September, 1862, revealed information on the physical configuration of the house. Elizabeth Brown, an officer's wife, testified that she eavesdropped on a conversation taking place on the first floor of the dwelling. She went upstairs and took off her shoes to listen "up in Mrs. Buckle's room, where Colonel Ford staid [sic]. I was listening down the stove-hole. There was nothing but a board floor, and a tin over the hole, which I lifted up."[127] Thus the house was at least 1 1/2 stories high, if not two.

John T. Kilham purchased the property at public sale in 1869.[128] Sometime after that date he built a two-story stone house on the tract, west of the site of the first dwelling at the point where Roads U2L and U3L end. The 1877 Atlas probably depicts this structure, although it does not identify the occupant of the building (Figure 7.4).

The stone house certainly had been constructed by 1896, as the tax assessment records from that year list improvements worth $500--a much higher amount than recorded for the simple log dwellings on the east side of the mountain.[129] On the 1910 USGS survey map, access to the house is shown along present Road U; however, this road does not continue past the structure. A track appears to connect the Kilham property with the old Unseld farm outside the park boundary (Figure 7.31).

When the National Park Service acquired Maryland Heights, structures on the property included the stone house, a combination barn and stable, and a chicken house; none were in very good condition. The house and the barn subsequently were torn down and the ground surface leveled, obliterating any trace of these structures. All that presently remains is the ruin of a small wooden chicken house measuring 11 x 8 ft.

Brick and Concrete Foundation (Lot 146). Little is known about the brick and concrete foundation situated in the southwest corner of Lot 146 (Figure 7.25). A structure apparently is shown at that location on the 1910 USGS survey map (Figure 7.32). The foundations visible today most certainly compose the remnants of the house started by Lyle and Kathryn Grove around 1955. The dwelling remained unfinished after the State of Maryland purchased the land in 1957 (see discussion under Lot 145). This accounts for the stacks of unused bricks found at the site.

Stone House Lot. James H. Elgin constructed the stone house circa 1840. Throughout the second half of the nineteenth century, this structure functioned as a combination store and drinking establishment, first under the proprietorship of John H. Reed, then under Albertus Spencer. Shortly after the passage of Prohibition in 1917, Spencer opened a museum in the building. After the exhibits were removed in 1927, the house apparently remained vacant much of the time until following World War II, when it became a private residence.[130]

Around 1917 a frame house was constructed adjacent to the stone house. The store was moved from the stone house into this building. Following the repeal of Prohibition, this new structure became a disreputable drinking establishment forced to close in the early 1940s.[131]

The roofless walls of the stone house presently stand on the lot (Figure 7.12). Nothing remains of the twentieth-century frame structure.

Gaskins Lot Site. All that presently remains of the Gaskins Domestic Site is a small, cut-out area along the north side of Harpers Ferry Road between the stone house ruin and the beginning of the fire road (Road U). No above-ground features are apparent. As a result, this site was not recorded as part of the archeological survey.

Little documentation was uncovered regarding the history of the Gaskins Lot. A 1904 photograph of the confluence of the Shenandoah and Potomac rivers clearly shows two structures on the lot, proving that improvements had been erected by this date (Figure 7.34). No structures are shown at this location in the 1877 Atlas, however, suggesting that the buildings were erected between 1877 and the date of the photograph. The 1910 USGS map depicts both structures (Figure 7.32).

In the 1904 photograph, the structure on the left side appears to be 2 1/2 stories high with a gable roof. On the side facing the road are two windows each on the first and second levels. The smaller second building has an addition on its north side.

A house stood on the property into the 1950s; whether this structure corresponds to one of the two buildings depicted in the photograph is not known. By 1960 this dwelling had disappeared.

Domestic Sites outside the National Park Service Boundary

Several small domestic sites were recorded adjacent to the park boundary on the east side of Maryland Heights. These sites are interpreted briefly below.

King Domestic Site (Lot J). According to Harold T. King, present owner of the property, the first dwelling on Lot J was constructed in 1866 by his grandfather, Marshall King. Marshall built a log structure which sat 10 to 15 ft southwest of the present house; however, this house was not represented in the 1877 Atlas (Figure 7.4). Roughly two decades later King erected a second log structure on the foundations of the first, perhaps around the time he gained title to his one-acre tract in the southeast corner of the lot.[132]

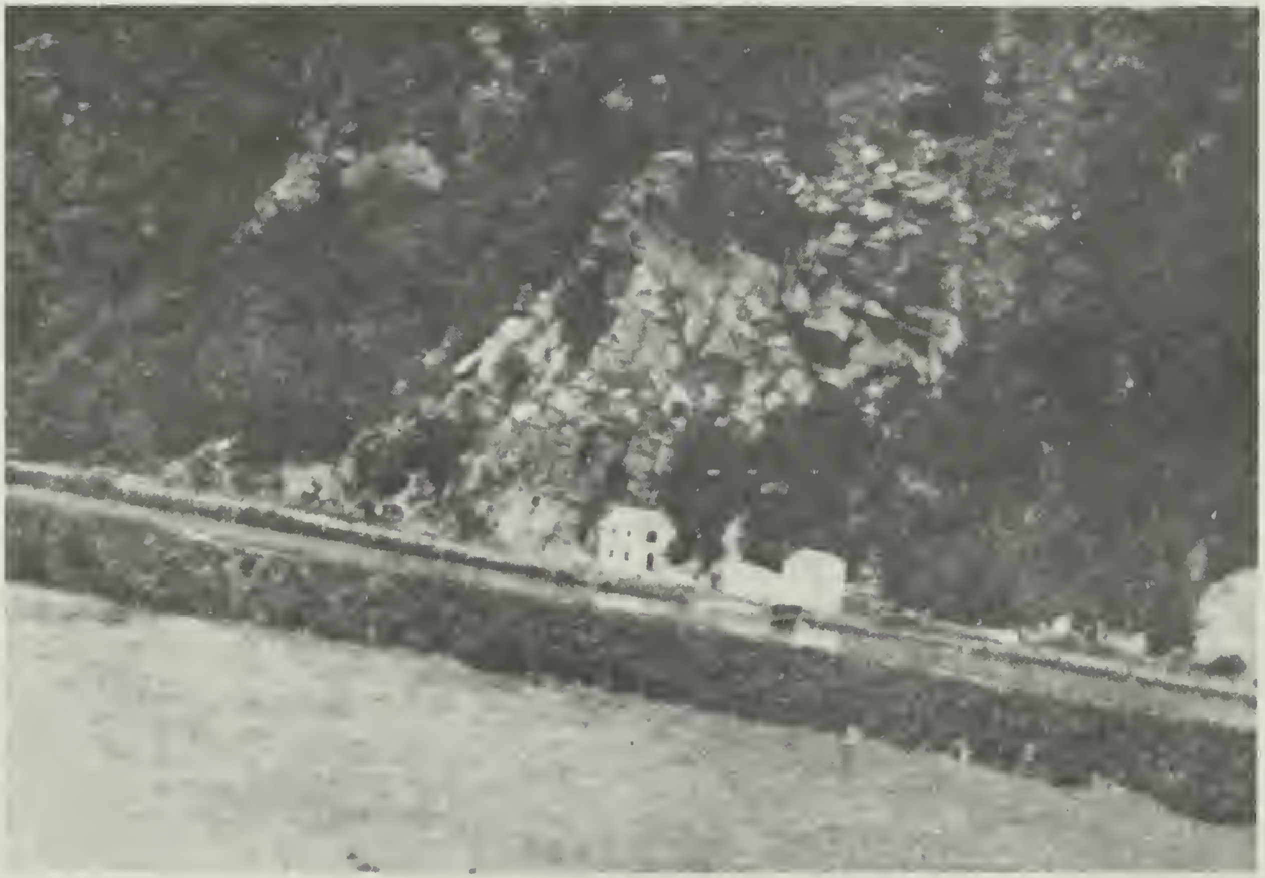


Figure 7.34 Detail from 1904 photograph of the confluence of Potomac and Shenandoah rivers, showing two structures on the Gaskins Lot along Harpers Ferry Road. (Harpers Ferry NHP).

Population census schedules for 1870 and 1880 appear to contradict King's remembrances to some degree. Marshall King is not listed in the 1870 census for Sandy Hook District, nor does there appear to be a household adjacent to the Norrises at that time. According to the 1880 census, a black family with the surname Beener lived next to Daniel Norris. The household head is identified as John Beener, a 54-year-old laborer. Along with his wife Mary, he shared the house with six children who ranged in age from 5 to 27 years, and four young grandchildren. Interestingly, the two youngest grandchildren (Maggie and Sadie) have the surname King.[133]

In 1904, William King, a son of Marshall, purchased the tract from Everett W. Himes, who had acquired it from Marshall in 1896. That same year John Fenton Norris constructed a third house on the property, the ruins of which presently stand above the road.[134]

The 1 1/2-story house measures 20 x 14 ft and is constructed of hewn logs (Figure 7.26). A number of these logs appear to have been salvaged from another structure, as they contain notches that are not functional to this building. It is plausible that the beams came from the second house, but Harold King avers that the old dwelling was not torn down until 1918.

In 1918, Thomas Easton constructed a log smokehouse uphill from the house.[135] The ruins of this structure measure 10 x 9 ft (Figure 7.27). Inside the smokehouse is a stone-lined pit four-feet square identified as a cellar hole.

On the south side of the standing house was a garden area, which was expanded to cover the site of the second dwelling after that structure was removed.[136] This area had been cleared of surface stone, which was piled against the stone wall separating Lots J and K. These stone piles correspond to two features recorded as part of Lot K, Features LK-F9 and LK-F10.

Bessie King, widow of William King, lived on Lot J until 1941. Thomas Easton, the carpenter who had constructed the smokehouse, occupied the house until 1946.[137] Since that time, the abandoned property has slowly deteriorated.

Easton Domestic Site (Lot N). The Easton Domestic Site sits on a small, one-acre parcel carved from the northeast corner of Lot N in 1890 when purchased by Eliza J. Powers for $30. She in turn sold the tract to Barbara Easton for five times that amount in 1895, which suggests improvements had been made to the property by that date. According to Harold King, John Fenton Norris constructed the house on the lot.[138]

The foundation of this house consists of a three-sided stone base measuring 21 x 16 ft and open to the west, or up slope (Figure 7.28). The house was still occupied in 1910 by Barbara Easton and two of her sons, William and Thomas. The structure also appears on the 1910 USGS survey map (Figure 7.32). Curiously, Road A extends to Lot N only as a narrow track from its intersection with Miller Avenue. A second access to the Easton house is shown as a trail extending eastward along an intermittent stream, through a farm belonging at that time to George Grim, down to the present Valley Road.

Official documentation ends in 1913, the last year taxes were paid on the Easton property. In 1924, Will Easton apparently sold the log house to George Grimm, who moved it to his farm along Valley Road, where it was reassembled "about 20 feet from his kitchen door."[139]

Grove Domestic Site (Lot N). In 1871, Jacob W. Grove purchased 1 1/2 acres in the extreme southeast corner of Lot N for $65. By 1877 he must have constructed a house on the property, for a dwelling appears under "J. Groves" in the 1877 Atlas of Washington County (Figure 7.4). Grove and his family apparently were living on the property in 1870, for he appears in the population census for that year immediately preceding Elizabeth Norris.[140] By 1910, this structure no longer existed, and no further records have been uncovered detailing subsequent ownership of the property.

The primary archeological feature present on the Grove Lot is a massive stone foundation 53.5 x 31.5 ft in size (Figure 7.29). This structure most likely is not the one shown in the 1877 Atlas, as it is too massive for any nineteenth-century house constructed in this vicinity. It possibly functioned as the foundation for a large barn, which again would have been unusual for this area.

Harold King remembers this property as belonging to the Morgans, a name that does not appear in any land transfers recorded for the east flank of Maryland Heights. He states that a log bungalow was to be constructed on top of the stone foundation, but that it was never completed.[141]

A short distance southeast of the principal foundation lies a deep depression measuring roughly 14 x 12 ft that may be part of the nineteenth-century Grove dwelling. No other surface indications of such a structure are apparent, however, in the surrounding area. Both this depression and the large stone foundation sit on a relatively flat, stone-free area beside Road A.

Powers Domestic Site (Lot O). The Powers Domestic Site consists of a 16 x 15 ft depression cut into the sides of the slope with stone rubble around its top edges. The east side is almost level with the ground surface; an opening in the rubble on this side is suggestive of an entryway. A small dwelling probably once stood here. Stone alignments and piles behind the depression imply that the ground was cleared and used for agricultural purposes.

Unfortunately, no historical documentation has been discovered confirming the existence of a house on this site. In 1895, the eastern 6 3/4 acres of Lot O were sold at public auction to Nicholas Powers. The advertisement for the sale described the property as a mountain lot. That same year, Powers divided the eastern-most three acres from the tract and sold it to

Frank Powers. The 1896 tax assessment listed this three-acre tract as unimproved. The property apparently was abandoned shortly thereafter, because it does not appear in any subsequent tax assessments surviving from the first half of the twentieth century.[142]

A house does not appear at this site on any of the historical maps, including the 1877 Atlas and the 1910 USGS survey. Harold King included this lot as part of the Morgan property (discussed under the Grove Domestic Site), but the Morgans never held title to any land in the immediate vicinity.[143]

Frank Powers possibly constructed a small house on Lot O shortly before the turn of the century, which was abandoned before the 1910 tax assessment and USGS survey map. This remains only a plausible hypothesis, however, until additional historical or archeological evidence is uncovered.

SUMMARY AND CONCLUSION

Domestic occupation on Maryland Heights was relatively short lived, spanning a 110-year period between 1850 and 1960. The greatest concentration of settlements existed over an even shorter period between 1870 and the turn of the century. As part of this section, the sequence of development and subsequent cycle of abandonment are established. Further discussion focuses on economic and social factors that influenced domestic settlement on the mountain, and places this occupation within the perspective of the larger community.

Following the synthesis of historical documentation is a short comparison of the physical data recorded for the individual dwelling sites. Finally, this section concludes with thoughts about further inquiry concerning the domestic development of Maryland Heights and surrounding area that were outside the scope of this particular project.

The earliest settlements on the Heights were established within a few years of the public sales conducted by the insolvent Antietam Iron Works. With the exception of Lot 146, better known as the Kilham Tract, and the Stone House Lot, initial development concentrated on the east flank of the mountain. These early establishments consisted of farmsteads carved out of the rocky slopes and generally defined by series of substantial stone walls. On Lot K, and to some degree on Lot Q, tremendous effort was put into construction of terraces that permitted agriculture on otherwise inhospitable terrain.

At the time of the Civil War, at least eight settlements were located around the base of Maryland Heights, all within the present National Park Service boundary. One of these, the Norris domestic site on Lot K, apparently consisted of two separate households. There also appear to have been at least two houses at the Dearing settlement on Lot Q. The small settlement on Lot P, counted separately here, may have been tied closely to Lot Q. Two additional sites were located on Lot S and Lot 146. A stone house sat at Lock 33, at the base of the steep cliffs overlooking Harpers Ferry. The early history of development on Lot T, unfortunately, remains unclear.

With the exception of the Norris family on Lot K, little is known about the inhabitants of the antebellum settlements. From military maps compiled during the Civil War, it appears that the residents of Lots Q and S may not have been the owners of record. Nothing at all is known about the owner of Lot P at this period, as no deeds have been uncovered. The Kilham property on Lot 146 was inhabited by a Mrs. Buckles, while the owner, Samuel Kilham, resided in Sandy Hook.

In the decade following the Civil War, two additional domestic settlements, both located outside the present park boundary, were constructed on the east flank of Maryland Heights. Marshall King, a freed slave, apparently erected a log dwelling on a one-acre lot shortly after the cessation of hostilities. He did not appear in the 1870 population census schedules for this area, however, leaving the exact date of construction uncertain. By 1880 a structure definitely had been erected at the site, and was inhabited by a large black family named Beener that had ties to the Kings. Jacob Grove built the second settlement between 1865 and 1870 on a one-half acre tract on Lot N.

Between 1890 and 1895, one additional domestic settlement was built on the east side of Maryland Heights, in the northeast corner of Lot N. After 1895 this one-acre parcel belonged to Barbara Easton. A dwelling possibly was constructed around this time on the Powers property on Lot O as well, but no documentation exists to make a determination one way or the other.

Compared with the larger farmsteads developed on Maryland Heights before the Civil War, it appears that the settlements constructed during the second half of the nineteenth century represented an economic downshift. Increasingly marginal lands were being settled by people who could not afford more productive lands.[144] Population censuses of that period identified both Beener and Grove as laborers, and Barbara Easton's three sons, all living at home in 1900, also listed their occupations as laborers.

The second half of the nineteenth century witnessed the abandonment of several of the domestic settlements. Lot S, which contains the largest house foundation on Maryland Heights, probably was abandoned by 1877, as the dwelling does not appear in the atlas published that year. Lot Q apparently was abandoned by the time Patrick Higgins purchased it at a tax sale in 1896; it remains unclear whether anyone subsequently lived there. Development of both these lots had begun prior to the Civil War, and it can be argued that they were the most substantial settlements on the mountain at that time. In addition, the Grove site was abandoned by 1896 (at the death of Jacob Grove?), perhaps making it the shortest occupied settlement on the east flank of Maryland Heights.

The domestic settlement on Lot 146 is an exception to the general decline experienced on the mountain in the second half of the nineteenth century. After the Civil War John T. Kilham, a railroad conductor, constructed a large stone house on the property. Extant tax records revealed that this was by far the most valuable house on the mountain throughout the latter decades of the nineteenth century, and well into the first decades of the twentieth.

By 1910, only the King, Easton, and two Norris households remained on the east side of the mountain. The economic marginality of these people is reflected in a tax assessment recorded for that year. At the very bottom, Barbara Easton's house and lot were valued at $75. Both William King and the estate of Daniel Norris (the north half of Lot K) were assessed $100 apiece for their respective dwellings and land. John Fenton Norris, on the other hand, received a substantially higher valuation of $225 that reflected a new house he had constructed several years previously. Although comparative data on tax assessments for the entire region were not compiled, a cursory glance through the tax records reveals that the amounts given above, with the possible exception of John Norris, were well below average for Pleasant Valley.

Over the following two decades the remaining occupied properties on Maryland Heights slowly were abandoned. The house on the north half of Lot K fell to ruin after William Norris's widow remarried around 1920 and moved away. In 1924 the Easton dwelling apparently was dismantled and moved to a nearby farm. Around this same time, John Fenton and Genie Norris moved out of their house on the south half of Lot K. A tenant occupied the building for a few years, but eventually the house was allowed to fall down.

Of the original inhabitants, only Bessie King, widow of William King, and her children remained on the east side of the mountain by 1930. Bessie continued living in the log dwelling until 1943, when she too left. Thomas Easton, a son of Barbara Easton, lived in the house for a few years afterwards, but eventually he moved away as well.

The settlements on Lot 146 and the Stone House Lot were the last of the antebellum sites to be inhabited. Both were purchased by the State of Maryland around 1960 for inclusion in Harpers Ferry National Monument. If these properties had remained in private hands, it is conceivable that they would have remained occupied; in the case of Lot 146, perhaps even by direct descendants of Samuel Kilham.

Some signs of a renewed twentieth-century interest in Maryland Heights are apparent along its slopes. On the east side of the mountain, Catherine Wasserbach constructed summer cottages on Lots L and M in the 1920s that were used by her family for a number of decades. On the west side, Edgar Spencer Weaver erected a substantial bungalow-style house in 1930 overlooking the Potomac River. Finally, Kathryn and Lyle Grove began constructing a house as late as the 1950s above Weaver's property. This house was not completed before the site was purchased by the State of Maryland.

Once families left their homesteads, they tended to stop paying taxes on the property as well, resulting in total abandonment. This interesting phenomenon has resulted in several properties, including the Easton tract, having no presently known owners. In effect, the inhabitants walked away because they viewed the land as having no value unless occupied as a residence, confirming the marginal character of their properties. A significant exception to this is the King property, which remains in family hands even though no longer occupied.

According to census and tax records, the individuals living on Maryland Heights were considered part of Sandy Hook, a community then known as Keep Tryst. These people had access to that community either along present-day Miller Avenue and the original route of Valley Road before construction of Rt. 340, or from Harpers Ferry Road, depending upon which side of the mountain they lived. The degree of integration with Sandy Hook remains unknown, but ties probably were strong.

Due to the fact that they were black, the Kings developed a closer relationship with Garrett's Mill, a small community about 2 1/2 miles to the north where additional black families resided. At this location stood a Baptist church which doubled as a grade school for black children.[145]

Most of the land on Maryland Heights remained undeveloped. Interestingly, while those who lived on the east flank of the mountain, particularly after the Civil War, were relatively poor, the men and women who held the timber lands along the east side were some of the wealthiest individuals in Pleasant Valley and the surrounding area. While a study was not conducted of the financial resources of those who owned just timber land, the Stonebraker, Boteler, Elgin, Hefflebower, and Miller families were the most prominent in Sandy Hook and the Valley. Members of these families probably purchased the mountain lots as speculative ventures.

A number of individuals who originally purchased timber lands on the west side of the mountain lived in Harpers Ferry. This contrasts with the east side, which, as stated above, was acquired primarily by residents of Pleasant Valley.

In the late nineteenth century, Charles F. Thomas of Frederick County began buying up tracts on Maryland Heights, particularly along the crest. He sold these properties to Daniel Baker in 1896. Thomas and Baker owned quarries around Buckeystown, Maryland, and also in Jefferson County, West Virginia.[146] They probably intended to open a quarry on the Heights as well, although it remains doubtful whether any of their plans came to fruition. An 1896 tax assessment, however, listed Thomas as owning 119 1/2 acres valued at $12 an acre for $1,434, with improvements of an unknown nature worth $450. Such a high assessment for mountain land was most unusual, and may have included the perceived value of minerals along the ridge top.

On the whole, remains of dwellings on Maryland Heights are ephemeral, consisting of unsubstantial stone foundations in a collapsed state. Most of the structures, primarily the later ones, were constructed against the slope, and therefore lack a stone wall on their uphill sides. Several of the earlier foundations, in particular Feature LK-F6 on Lot K, Feature LQ-F14 on Lot Q, and Feature LS-F5 on Lot S, have large stone chimney bases.

The three largest dwellings were constructed prior to the Civil War. On both Lot S and the Stone House Lot, the structures measured 30 x 22 ft. Although not defined by remnants of a stone foundation, Feature LQ-F8, the large depression on Lot Q, has dimensions of approximately 26 x 20 ft. From a Civil War-era photograph it is apparent a building stood at this spot; this house certainly would have been at least as large as the depression.

The remaining foundations on Maryland Heights vary little in size, generally ranging from 20 x 14 ft (Feature LQ-F14 and the King dwelling) to 21 x 16 ft for the Easton house. This is not surprising, for John Fenton Norris, a carpenter living on Lot K, constructed at least three of these dwellings around the turn of the century. On the Grove and Powers tracts are depressions measuring 14 x 12 ft and 16 x 15 ft, respectively, that may have functioned as cellar holes for larger buildings with unknown dimensions.

The dwellings erected on Maryland Heights, with the exception of the stone houses on Lot 146 and along Lock 33, all were constructed of log. Both in size and general appearance they would have resembled the small, antebellum log building that still stands on the historical Unseld property near the west base of the mountain (Figures 7.35 and 7.36).[147]

Conclusion

Compared to the east side of Maryland Heights, the west flank witnessed very little domestic occupation. The virtual absence of two primary resources probably account for this lack of settlement. Foremost, water was not as plentiful as on the east side, with few springs to tap from. Secondly, no well-defined roads followed the west flank of the mountain like the Thirty-Foot Reserve Road behind Sandy Hook.

Two of the longest occupied sites on the mountain remained within the same families throughout the course of their histories. Both the Kilhams and the Norrises retained possession of their respective lots from the 1850s until they were purchased by the State of Maryland around 1960. In fact, a direct descendent of Samuel Kilham was living in the house on Lot 146 at that time. The King lot on the east side of Maryland Heights still is owned by a member of that family, Harold King, even though the house ceased to be occupied forty years ago.

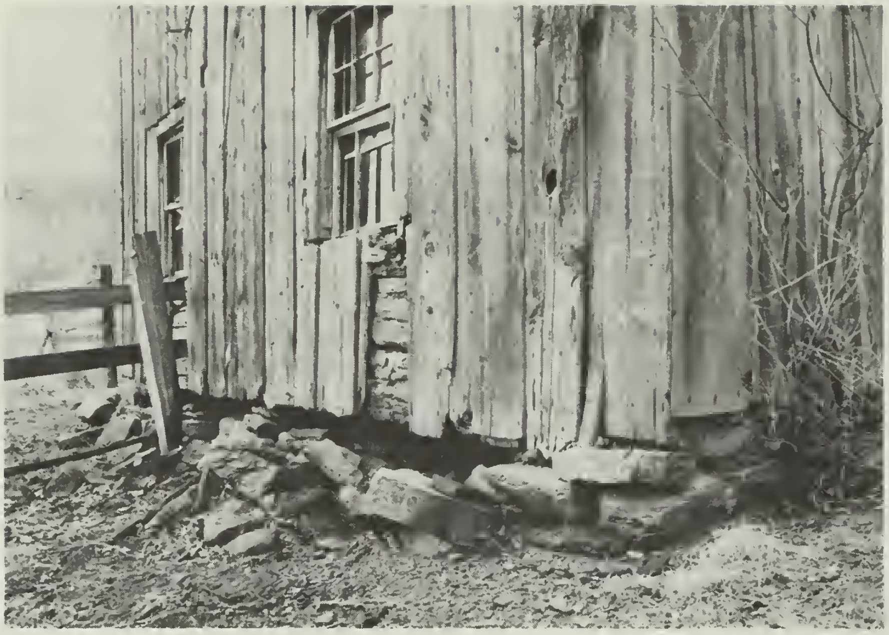


Figure 7.35 Unseld Farm. West elevation of log structure showing collapsed stone foundation under building, looking northeast. Note board and batten siding over logs.

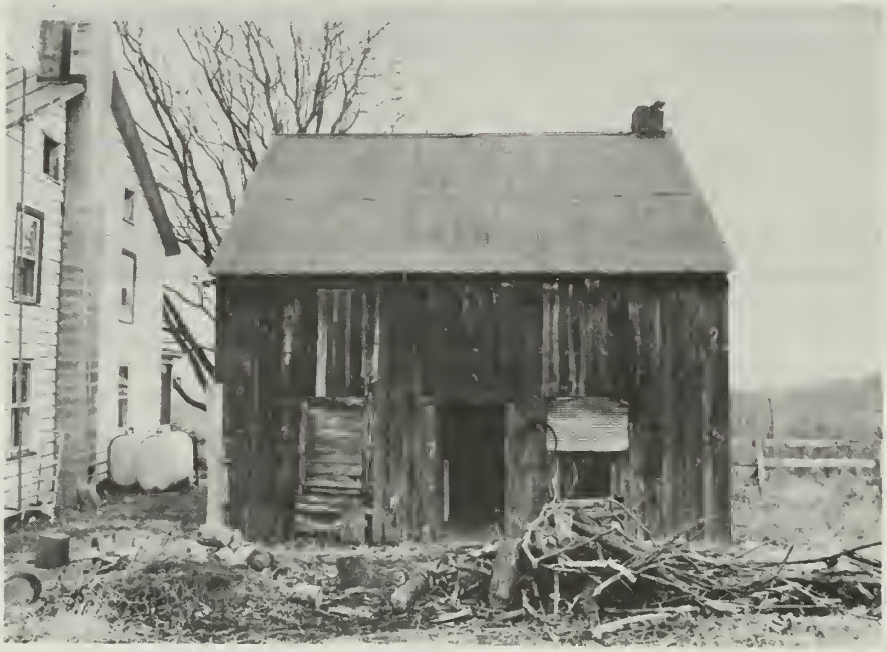


Figure 7.36 Unseld Farm. East elevation of log structure. Note board and batten siding over logs.

The settlements on Maryland Heights were linked closely with the community of Sandy Hook. This poorly-understood relationship requires additional clarification that is outside the scope of this project. In fact, the history of Sandy Hook itself, a once-vibrant canal and railroad town, has never been researched. An understanding of the development of Sandy Hook would lead to a better understanding of the domestic development of Maryland Heights.

Many, if not most, of the individuals who moved to Maryland Heights appear to have been raised in the local area and had extensive kinship networks in Pleasant Valley and Sandy Hook. In addition, the people who lived on the mountain generally were related to each other, at least through marriage. For example, a daughter of Barbara Easton married Daniel Norris either shortly before or after the Eastons moved into the house on Lot N.[148]

The archeological sites and features recorded during the domestic sites survey survive virtually intact. These domestic sites provide a tremendous data base for studying the development of marginal mountain farms in the mid-nineteenth century, as well as their subsequent decline during the first decades of the twentieth century. Historical documents tend to be silent about the individuals who inhabited such farms. Thus, continued archeological research may provide the best method of understanding and interpreting the domestic settlements on Maryland Heights.

CHAPTER VIII
MANAGEMENT SUMMARY

Documenting the remains of historic sites on 763 acres of National Park Service land on Maryland Heights, Maryland, served as the primary purpose of the "Cultural Resources Inventory of Maryland Heights" (HAFE-240).

Through the joint efforts of historical and archeological research, this project has produced the following: (1) a historic resource study which combines historical documentation with archeological data derived from survey and site evaluation; (2) completed cultural sites inventory forms; (3) a cultural resource base map; (4) an addendum to the existing National Register nomination for Maryland Heights; (5) and an enhanced List of Classified Structures (LCS) for Harpers Ferry National Historical Park.

The project commenced in November, 1984, when the project historian began collecting data on the location, function, size, and age of historic sites on Maryland Heights. Archeological survey began in March, 1985, and field work continued until November, 1987. The research team completed this historic resource study in July, 1988.

This project helps move Harpers Ferry Park toward full compliance with Executive Order 11593 and the National Historic Preservation Act of 1966, as amended, which requires all Federal agencies to identify and inventory cultural sites on Federal lands. The project also fulfills the requirements of NPS-28, the "Cultural Resource Management Guideline."

Included within the Maryland Heights historic resource study are the results of an extensive archeological examination of the mountain. These results include survey and site analysis of seven Civil War fortifications and their ancillaries; 13 Civil War campgrounds; 57 charcoal hearths associated with the Antietam Iron Works; 23 miles of historic roads; and 8 domestic house sites and/or farms.

This project produced two FIRSTS in the field of historical archeology. Regarding the charcoal industry, this study represents the first systematic mapping and recording in the United States of charcoal hearths and roads associated with an antebellum iron plantation. Previous studies at ironworks have focused on the furnace stack and its immediate environs. This report emphasizes a company's fuel procurement efforts--obtaining the tons of charcoal required to fuel a cold-blast furnace.

Another pioneering aspect of this study involves the systematic mapping and recording of 13 Civil War campgrounds. Archeologists, for the most part, have ignored the Civil War as "recent past," while historians have focused on battlefields and campaigns with little attention directed toward encampments. This study combines the history and archeology of the Civil

War campground, producing a groundbreaking effort which will serve as a model for future researchers.

Historical research conducted at the National Archives, Library of Congress, U.S. Army Military History Institute (Carlisle, Pa.), the Maryland State Archives, and in local libraries and courthouses complements the archeological discoveries throughout this report. This project, in sum, proves the merits of blending two similar but separate disciplines--history and archeology--into a systematic, concerted research effort.

The report categorizes the historical uses of Maryland Heights into three periods. A summary of each period appears below.

CHARCOAL INDUSTRY

History

A Scotsman and tobacco merchant named John Semple became the first owner of Maryland Heights when he patented a 10,000-acre tract along Elk Ridge known as Keep Triste in 1764. Semple constructed and operated Keep Triste Furnace on the south bank of the Potomac River, near the point where Elk Run empties into it. The operation at Keep Triste Furnace possibly used the hardwoods on Maryland Heights as a source of charcoal.

In 1810, John McPherson and John Brien, owners of the Antietam Iron Works, purchased 8,000 acres of Semple's estate on the Maryland side of the Potomac (including Maryland Heights). Located at the mouth of the Antietam Creek 12 miles northwest of Harpers Ferry, the Antietam Iron Works became famous as one of the largest nail producers in the United States during the first half of the 19th century. Charcoal from Maryland Heights helped fuel a furnace stack requiring 150-240 bushels of charcoal to produce one ton of iron, in addition to a couple of charcoal-burning forges which converted pig iron into bar iron. Although the dates of timber clearing on the heights remain a mystery, the last cutting on Maryland Heights probably occurred in the early 1840s. One acre of timber on Maryland Heights probably yielded between 500-600 bushels of charcoal.

Financial problems closed the furnace in 1848, forcing the Iron Works to sell 13,000 acres after subdividing this property into approximately 250 lots. Thirty of these lots (or portions of lots) fall within the current boundary of Harpers Ferry National Historical Park. Most of these lots average 20-25 acres and appear as narrow, rectangular strips extending from the east and west bases of the mountain to the crest. With the sale of these lots prior to the Civil War, the charcoal industry on Maryland Heights ceased.

Archeology

Archeological survey recorded 57 charcoal hearths and 23 miles of charcoal roads within 763 acres of National Park Service property on Maryland Heights. An average hearth measured 38 ft long by 28 ft wide, with most elliptical-shaped platforms cut into the mountain's slopes. Over a ten-day burning period, a hearth generally transformed 25-50 cords of wood into 875-1750 bushels of charcoal, or an average yield of 35 bushels of charcoal per cord. Since a burning hearth required constant supervision to insure even and slow burning, colliers (or the men who tended the hearths) lived on the mountain during the burning period.

The charcoal roads divided into two types--sled roads and wagon roads. Each charcoal hearth lay at the base of a woodlot. Steep, ill-defined sled roads ran down hill from these woodlots to the hearth, allowing laborers to drag cut timber to the hearths. Once the timber had been transformed into charcoal, it was loaded into wagons which followed wagon roads from hearth to hearth. Once off the mountain, these wagons carried the charcoal 12 miles north to the Antietam Iron Works.

This study produced a base map showing the distribution and location of charcoal hearths and roads on Maryland Heights. For the first time in the United States, attention has focused on the system of fuel procurement for an early 19th-century iron furnace plantation.

CIVIL WAR

History

Col. Thomas J. Jackson ordered the first military occupation of Maryland Heights during the first week of May, 1861. Jackson's placement of Southern troops on Maryland soil created uneasiness in Richmond and Frederick (the temporary headquarters of the Maryland General Assembly), because some interpreted the move as an invasion of Maryland--a border state then being wooed by the Confederacy. Despite this diplomatic contention, Southern troops remained on Maryland Heights until mid-June, 1861, when they abandoned the mountain during the Confederate evacuation of Harpers Ferry.

Confederate forces returned to Maryland Heights only once more. Battle raged on the mountain on September 13, 1862, during the Confederate investment of Harpers Ferry. Despite a "most obstinate resistance" against troops from Mississippi and South Carolina, at 3:00 p.m. on the 13th, the Federal defenders received orders to withdraw from the mountain. About 40 hours after the loss of Maryland Heights--the highest ridge surrounding Harpers Ferry--Union commander Dixon S. Miles surrendered 12,500 men to "Stonewall" Jackson's besieging and encircling Confederates.

One week after the surrender of September 15, 1862, Union forces once again reoccupied Maryland Heights; and since Federal commander George B. McClellan considered the permanent occupation of Harpers Ferry and Maryland Heights "a military necessity," fortifications soon sprang up atop the mountain.

By March, 1863, Union soldiers had constructed four new fortifications on Maryland Heights (the 30-pounder Battery, Stone Fort, Interior Fort, and Exterior Fort) and had improved the Naval Battery--the oldest defensive position on the mountain (established May, 1862). In mid-June, 1863, in anticipation of an expected Confederate advance against the heights during the outset of the Gettysburg Campaign, the Federals improved their existing defenses and added two new gun positions--the 100-pounder Battery on the crest and the Spur Battery on the mountain's western slope. Later in 1863 on the crest, the Federals established the Mortar Battery, the last fortification constructed on Maryland Heights. Eight separate defenses now guarded the mountain against attack.

The defenses of Maryland Heights received one major test during the war. On July 6-7, 1864, two divisions from Jubal Early's army (approximately 6,000 men) demonstrated against the defenses from the north; but when the Federals refused to abandon their position, Early withdrew his army, declaring the defenses too strong to attack. Never again did Confederates challenge the "citadel of Harpers Ferry."

Federal troops occupied Maryland Heights until July, 1865. When they abandoned the mountain for the last time, they left behind their fortifications and campgrounds.

Archeology

Archeological survey recorded seven (7) fortifications and 13 campground areas on Maryland Heights. Gun emplacements at the Spur Battery were not included since they lie outside the park boundary.

Although historical documents revealed the location and general layout of the fortifications, these records yielded little information on the size, composition, and appearance of the Maryland Heights defenses. In addition, ancillary defenses such as blockhouses and stone wall breastworks, as well as gun platforms and powder magazines, received little mention in contemporary sources. This survey located and mapped these features, and the resulting base maps (18 total) provide a comprehensive picture of the defenses of Maryland Heights.

With the exception of the Stone Fort--where the archeology team measured and drew each stone to scale--detailed topographic mapping defined the size and appearance of each fortification. Written feature descriptions record the composition and condition of the defenses and related structures. For example, through comparison of feature descriptions, this analysis discovered the 11 powder magazines recorded in this study shared similar dimensions and configurations.

Within the 13 campground areas (totaling nearly 60 acres), archeological survey recorded 319 individual features. Most of these fell into three categories: stone foundations, leveled platforms, or depressions. Most of the platforms and foundations are rectangular, and most average 6 x 8 ft--large enough to support shelter tents and wedge tents. Many of the stone foundations probably supported log superstructures used as winter quarters or as guardhouses and cookhouses.

In terms of location, nine of the 13 campgrounds occupy the crest or the plateau just below and west of the crest. Two of the campgrounds lie in the vicinity of the Spur Battery, halfway down the mountain's west slope. On the east side of the Naval Battery sits another campground, and a final one occupies the plateau below and east of the Stone Fort.

The base maps for the campgrounds reveal no overt patterns of arrangement or organization within the camps. Historical documents also remain silent on this subject. Since this study recorded surface and above-ground features only, and since no excavations occurred during this project, features associated with campgrounds may be present, but they remain buried under inches of humus.

This project represents the first systematic effort to record the above-ground remains of Civil War campgrounds. As a result, this study will serve as a model for future research in this field.

DOMESTIC SITES

History

Following the subdivision of lands owned by the Antietam Iron Works in 1848, private individuals purchased lots on Maryland Heights, and hence began domestic settlement on the mountain.

Since the rocky and steep mountain terrain offered non-productive, economically marginal land, most of those who established homes in this environment generally came from the poorer segment of society. Though lacking money, these early settlers labored with their hands, eventually transforming some of the Iron Works' lots into small mountain farms. The labors of families like the Norris', Easton's, Dearing's, and Grove's have left a substantial archeological record, especially along the eastern base of Maryland Heights.

This study included title searches for the thirty lots originally owned by the Antietam Iron Works and now within the National Park boundary. Tax and census records were examined as well as deeds. Interviews with direct descendants of people who lived on the mountain also proved invaluable, especially in establishing the location and use of structures. The information gleaned from these sources revealed several social patterns. To begin with, undeveloped lots on the east side of Maryland Heights belonged to wealthy landowning families in Pleasant Valley, such as the Elgins, Botelers, and Stonebrakers. Lots which remained undeveloped on the west side generally belonged to Harpers Ferry residents like Doran, Marmion, and Peacher. For those on the east side who improved their lots into small mountain farms, a mountain community developed with close associations with Sandy Hook. Intermarriage became common between families residing on the mountain.

Although presently outside the park boundary, Lot J belonged to a black family which established a farmstead at the east base of the mountain following the Civil War. Marshall King, formerly a slave of James Elgin (a prominent Pleasant Valley landowner), constructed his first cabin on the property in 1866. This land still remains in the King family (1988).

Archeology

The archeological survey recorded nine 19th-century domestic sites within the park and four additional 19th-century sites just outside the park boundary on the mountain's east side.

Within the nine sites located inside the park, the archeological team discovered 78 features. These included stone house foundations and cellar depressions which probably supported log superstructures. Other features included foundations of outbuildings, such as smokehouses, barns, and springhouses. The survey revealed one small family cemetery on Lot K. Perhaps most dominating are the well-built stone walls extending prominently along the mountain's slopes--silent reminders of the barnyards and gardens of these mountain farmers.

Six base maps reveal the location and arrangement of the domestic sites features described above. These maps present detailed documentation of mountain farmsteads.

CONCLUSION

This project allowed a thorough examination of historical documents pertaining to the three primary uses of Maryland Heights--charcoaling by the Antietam Iron Works prior to the Civil War; the defense and occupation of the mountain by Union and Confederate forces from 1861-1865; and domestic habitation before and after the Civil War.

The archeological survey of 763 acres of National Park Service property on Maryland Heights recorded nearly 450 surface features related to the three uses described above. All of these features have been mapped and described.

Two pioneering archeological studies resulted from this project. The systematic mapping of features associated with the procurement, production, and transportation of charcoal (for use in an iron furnace) had not been attempted before this project. In addition, until now, archeologists had never conducted systematic surveys of Civil War campgrounds.

The results of these groundbreaking efforts hopefully will serve as models for future researchers. In addition, this study will help Harpers Ferry National Historical Park to better manage its cultural resources and enhance its interpretive program.

NOTES
CHAPTER II

[1] Ernst Cloos, "The Structural Geology of Washington County," in The Physical Features of Washington County (Baltimore: Maryland Department of Geology, Mines and Water Resources, 1951), p. 141; Turbit H. Slaughter, The Water Resources of Allegany and Washington Counties, Bulletin #24 (Baltimore: Maryland Department of Geology, Mines and Water Resources, 1962), p. 35.

[2] Harold E. Vokes, The Geography and Geology of Maryland (Baltimore: Maryland Geologic Survey, Bulletin #19, 1966), p. 73; Slaughter, p. 12; Vokes, p. 43, Table #7; Cloos, "Structural Geology," p. 139 and Figure 25.

[3] Ernst Cloos, "The Stratigraphy of Sedimentary Rocks of Washington County", in The Physical Features of Washington County (Baltimore: Maryland Department of Geology, Mines and Water Resources, 1951), p. 39.

[4] Cloos, "Structural Geology", pp. 139-140; Vokes, pp. 71, 73.

[5] Cloos, "Stratigraphy of Sedimentary Rocks", p. 22; Cloos, "Structural Geology", pp. 124, 126, 139-140.

[6] Slaughter, p. 236.

[7] Slaughter, p. 236.

[8] Slaughter, p. 226.

[9] United States Department of Agriculture, Soil Conservation Service, in cooperation with the Maryland Agriculture Experiment Station, The Soil Survey Report of Washington County, Maryland (Washington, D.C.: U.S. Government Printing Office, 1959), pp. 5-53.

[10] U.S. Department of Agriculture, p. 47.

[11] U.S. Department of Agriculture, pp. 25-26.

[12] U.S. Department of Agriculture, pp. 34, 44-45.

[13] U.S. Department of Agriculture, pp. 20, 33-34.

[14] U.S. Department of Agriculture, pp 16-17.

NOTES
CHAPTER III

[1] E. N. Hartley, *Ironworks on the Saugus* (Norman: University of Oklahoma Press, 1957); Arthur Cecil Bining, *Pennsylvania Iron Manufacture in the Eighteenth Century* (Harrisburg: Pennsylvania Historical and Museum Commission, 1979).

[2] Edward F. Heite, "The Pioneer Phase of the Chesapeake Iron Industry: Naturalization of a Technology," *Quarterly Bulletin, Archeological Society of Virginia*, 38, No. 3 (1983), p. 158.

[3] Paul F. Paskoff, *Industrial Evolution: Organization, Structure and Growth of the Pennsylvania Iron Industry, 1750-1860* (Baltimore: The Johns Hopkins University Press, 1983), p. 8.

[4] Bining, pp. 65-66.

[5] Bining, p. 70.

[6] Richard H. Schallenberg and David A. Ault, "Raw Materials Supply and Technological Change in the American Charcoal Iron Industry," *Technology and Culture*, 18 (1977), p. 438, 444; Peter Temin, *Iron and Steel in Nineteenth-Century America: An Economic Inquiry* (Cambridge: The M.I.T. Press, 1964), p. 83; Frederick Overman, *The Manufacture of Iron in All Its Various Branches* (Philadelphia: Henry C. Baird, 1854), p. 168; Fred W. Shearer, "A Bygone Industry," *The Service Letter*, 7th Ser., No. 11 (Harrisburg: The Pennsylvania Department of Forests and Waters, 1936), n. pag.

[7] Richard H. Schallenberg, "Charcoal Iron: The Coal Mines of the Forest," in *Material Culture of the Wooden Age*, ed. Brooke Hindle (Tarrytown, New York: Sleepy Hollow Press, 1981), p. 273.

[8] Schallenberg, p. 273.

[9] Schallenberg, p. 281; Bining, pp. 72-73; Paskoff, pp. 7-8.

[10] Overman, p. 255.

[11] Paskoff, p. 24.

[12] Temin, p. 52; James M. Swank, *History of the Manufacture of Iron in All Ages* (Philadelphia: The American Iron and Steel Association, 1892), p. 366.

[13] Charles K. Hyde, *Technological Change and the British Iron Industry, 1700-1870* (Princeton: Princeton University Press, 1977), pp. 88-89.

[14] Schallenberg, p. 284.

[15] Schallenberg, p. 284.

[16] Schallenberg, p. 276.

[17] Temin, p. 83; Schallenberg, p. 276; David C. Mudge, "Charcoal and Iron: Some Interpretations of the Use of Charcoal by the Early Iron Industry in New Jersey," an unpublished paper on file, Hopewell Village National Historic Site, pp. 4-5.

[18] Mudge, p. 3; Temin, p., 83.

[19] Bining, p. 63; Joseph E. Walker, Hopewell Village: The Dynamics of a Nineteenth Century Iron-Making Community (Philadelphia: University of Pennsylvania Press, 1966), p. 240.

[20] Paskoff, p. 22.

[21] Paskoff, pp. 17-18; Jackson Kemper, American Charcoal Making in the Era of the Cold-blast Furnace (n.p.: Eastern National Park and Monument Association, n.d.), p. 10.

[22] Kemper, p. 18.

[23] Shearer, n. pag.; Bining, p. 62.

[24] Overman, p. 104.

[25] G. Svedelius, Hand-Book for Charcoal Burners (New York: John Wiley & Son, 1875), p. 30.

[26] Svedelius, p. 34.

[27] Svedelius, p. 33.

[28] Bining, p. 62; Kemper, p. 8; Overman, p. 104.

[29] Overman, p. 104.

[30] Kemper, p. 12.

[31] Bining, p. 62.

[32] Overman, p. 103.

[33] Overman, p. 108; Bining, p. 62.

[34] Kemper, p. 22.

[35] Shearer, n. pag.

[36] Bining, p. 63; Walker, p. 245; Schallenberg, p. 290.

[37] Mudge, p. 3. Mudge multiplied what he considered a maximum yield, 40 bushels per cord, with the maximum estimate of 40 cords harvested per acre (see discussion in text) to determine the maximum bushels of charcoal that could be produced per acre--1,200 bushels. Census data studied by Mudge suggested a low 26 bushels per cord of wood for the pine forests of New Jersey. This minimal figure he multiplied with his estimate of the minimum number of cords per acre (20) to produce the minimum figure of 520 bushels of charcoal per acre. It must be kept in mind, however, that these figures represent extremes.

If, as stated within the text, the average antebellum blast furnace consumed between 60,000 and 144,000 bushels of charcoal per year, and using the above figures for minimum and maximum amount of charcoal produced per acre, a minimum of 50 acres would be required and a maximum of 276. The latter figure is significant, as it suggests that relatively small amounts of land were needed to provide fuel for even substantial ironworking complexes.

[38] Kemper, p. 18.

[39] Kemper, p. 8; Shearer, n. pag.

[40] Kemper, p. 8; Bining, p. 111; Bill Metzel and Kevin Parkes, "The Fiery Mounds: Penn's Woods Charcoal Industry," The Pennsylvania Naturalist 2, No. 2 (1979), pp. 7-11.

[41] Kemper, p. 8; Thomas L. Struthers, "Archeological Survey of Catoctin Furnace, Cunningham Falls State Park and Adjacent Areas, Frederick County, Maryland" (Unpublished report prepared by John Milner Associates, West Chester, Pennsylvania, 1981), pp. 40-43.

[42] Temin, p. 83.

[43] Schallenberg and Ault, p. 446; Kemper, p. 24.

[44] Paskoff, p. 29.

[45] Bining, p. 5; Hartley, p. 3.

[46] Paskoff, p. 1, 60.

[47] John W. Wayland, Twenty-Five Chapters on the Shenandoah Valley (Harrisonburg, Virginia: C. J. Carrier Company, 1976), p. 99; Susan Winter Frye, "Archeological Excavations at the Antietam Iron Furnace Complex (18Wa288), Washington County, Maryland," Maryland Historical Trust Manuscript Series, No. 37 (1984), p. 16; Frederick County (Md.) Land Records J, p. 811.

[48] David Curtis Skaggs, "John Semple and the Development of the Potomac Valley, 1750-1773," The Virginia Magazine of History and Biography 92, No. 3 (1984), pp. 283-289.

[49] Frederick County (Va.) Land Records 8, p. 432 and 11, p. 59; Frederick County (Md.) Land Records H, p. 484; Berkeley County Land Records 16, p. 173. The location of the Virginia ore bank is not given in the deed. The bank was mined extensively by the Antietam Iron Works throughout the nineteenth century, as was Ore Hill, which became the site of Fort Duncan during the Civil War.

[50] Frederick County (Md.) Land Records J, p. 793.

[51] Michael D. Thompson, The Iron Industry in Western Maryland (Morgantown, West Virginia: Michael D. Thompson, 1976), pp. 22-23.

[52] Frederick County (Md.) Land Records J, p. 798. Joseph Chapline was paid £300 by each of the partners for the lands he conveyed.

[53] Maryland Chancery Court Records 9 (1763-1765), p. 251. The General Assembly had passed an act in 1719 to encourage iron manufacturing within the colony: "Enacted, that if any person or persons shall desire to set up a forging mill or other convenience for carrying on Iron Works on lands not before cultivated adjoining a stream, he may get a writ of ad quod damnum. On the return of this, if the owner refuses to build such a mill and gives securities to complete it within four years, the governor may grant one hundred acres, the owner being paid for it" (from Singewald, p. 128). In effect, the land was condemned for the public good.

[54] Frederick County (Md.) Land Records J, p. 91, p. 95 and p. 382; Maryland Patent Records BC & GS 18, p. 458. Semple purchased the properties from several individuals. None of these properties were owned by Joseph Chapline, although they fell within the outline of the conveyance he made to Beall and the other partners.

[55] Maryland Provincial Court Judgment Records 6, p. 313; Frederick County (Md.) Land Records J, p. 805.

[56] Frederick County (Md.) Land Records J, p. 805.

[57] Frederick County (Md.) Land Records J, p. 811.

[58] Frederick County (Md.) Land Records K, p. 1331 and p. 1341. Ross & Company received 3,365 acres of Keep Triste from Semple. The acreage for the part of Little I Thought It conveyed to Semple is not discussed in any of the land records.

[59] Frederick County (Md.) Land Records M, p. 378, p. 390 and p. 413; Frederick County (Va.) Land Records 13, p. 36. Upon Joseph Chapline's death in 1769, David Ross purchased the deceased partner's interest in Frederick Forge and thereafter held a controlling half interest until his own death in 1778.

[60] Skaggs, p. 300 and p. 302; Donald Jackson and Dorothy Twohig, ed., The Diaries of George Washington, II (Charlottesville: University Press of Virginia, 1976), pp. 3-19.

[61] Skaggs, pp. 300-302.

[62] Skaggs, pp. 301-302; Berkeley County Land Records 16, p. 173.

[63] Maryland Chancery Court Records, File No. 3037. About 100 squatters apparently had settled on Sample's Manor, primarily on bottomland west of Elk Ridge. Sample's Manor included the southern part of Keep Triste (5,569 1/2 acres) on Elk Ridge and the west slope of South Mountain, the southern part of Little I Thought It (2,105 acres), Ore Hill (120 acres), and The Gleanings (333 acres), minus 126 acres conveyed earlier to Joseph Peck Smith.

[64] Maryland Chancery Court Records, File No. 3037 and File No. 3328.

[65] Maryland Chancery Court Records, File No. 3328; Washington County Land Records 18, p. 288.

[66] Letter from Samuel Annin to the Secretary of War, William Eustis, April 16, 1811. Microfilm Reel 18, vol. 6, p. 547, Harpers Ferry National Historical Park Library. The U. S. government subsequently purchased wood rights to Loudoun Heights to secure a supply of charcoal. Interestingly, this letter also states that "Messrs. McPherson & Brien . . . contemplate erecting works within one mile of this place." Obviously, nothing came of these plans.

[67] Washington County Land Records 25, p. 348.

[68] Thompson, p. 67 and p. 82.

[69] Census of Manufactures, 1820, Schedules for Washington County, Maryland. The census also reported that the Iron Works consisted of a "blast furnace, furnace wheel, 1 pair bellows, forge, 4 fires, 6 wheels, 4 pair bellows merchant mill with 4 pair stones & suitable machinery, saw mills." The complex employed 250 men who earned total wages of $30,000 annually. It is not clear whether this number included the large number of slaves owned by McPherson and Brien.

[70] Estimates of the amount of pig iron required to produce a ton of refined iron vary. Bining (p. 110) states that 2,700 pounds of pig iron would produce about 2,000 pounds of finished bars. According to Overman (p. 255), "one kind of metal will yield ninety or ninety-two per cent. of blooms; while another kind will yield but eighty per cent., or even a less percentage than that." Paskoff (p. 21) asserts that 1.5 tons of pig iron were required to produce one ton of anconies--a large amount of wastage compared to the first two estimates, but an estimate founded on careful research of primary documents.

[71] Swank, p. 255; Joseph T. Singewald, Jr., The Iron Ores of Maryland (Baltimore: The Johns Hopkins Press, 1911), p. 145; Thompson, p. 87. Singewald states that the nail factory had 25 nail machines and the rolling mill two trains of rolls.

[72] Washington County Land Records 35, p. 42, p. 402 and p. 656; Antietam Iron Works Ledger Book, p. 214.

[73] Census of Manufactures, 1840, Schedules for Washington County, Maryland. A description of the Iron Works as it appeared in 1841 reveals the extent of the establishment: "At the time of which we are speaking, one water wheel, fourteen feet high and eight feet wide, drove an improved saw mill, and shingle, stave and jointing machines. The furnace bellows wheel was twenty feet high and four feet wide. The furnace blown by this wheel made from forty to sixty tons of metal a week. Another water wheel, sixteen feet high, drove nineteen nail and spike machines, with the necessary cutters to prepare the plates. Between four and five hundred kegs of nails, varying in size from two-penny up to seven-inch spikes, were manufactured each week. Another water-wheel twelve feet high worked a ponderous chaffery hammer. There was a six-fire forge, with a hammer weighing twenty-one tons driven by a sixteen foot wheel. There were also two forge bellows wheels seventeen feet high. There was a rolling mill for turning rolls of various sizes, nail rods, nail plates and bar iron. This machinery was driven by an overshot wheel fourteen feet high and twenty feet wide. There were also three puddling furnaces and an air furnace. Two other wheels, seventeen feet high, drove a merchant grist mill, with four run of French burrs. All of these wheels were driven from the same race, supported by a strong wall laid in hydraulic cement" [from Thomas J. C. Williams, A History of Washington County, Maryland (Hagerstown, Maryland: John M. Runk & L. R. Titsworth, 1906), pp. 247-248].

[74] The American Iron and Steel Association, Directory to the Iron and Steel Works of the United States (Philadelphia: The American Iron and Steel Association, 1880), p. 44.

[75] J. P. Lesley, The Iron Manufacturers Guide (New York: John Wiley, 1859), pp. 50-51.

[76] Walter S. Sanderlin, The Great National Project: A History of the Chesapeake and Ohio Canal (Baltimore: The Johns Hopkins Press, 1946), P. 306.

[77] Census of Manufacture, 1840, Schedules for Washington County, Maryland.

[78] Letter from William B. Clarke to Coleman Yellott, Esq., July 24, 1853. Antietam Furnace File, Western Maryland Room, Washington County Free Library, Hagerstown, Maryland.

[79] Washington County Land Records 43, p. 30.

[80] Washington County Land Records 42, p. 402; 43, p. 30; Antietam Iron Works Ledger Book, p. 129.

[81] Antietam Iron Works Ledger Book, p. 130; Washington County Land Records 53, p. 64.

[82] Antietam Iron Works Ledger Book, p. 252 and p. 361.

[83] Washington County Land Record Books 55, p. 218.

[84] Kemper, p. 8; Struthers, pp. 41-42. It should be noted that Kemper most likely did not physically survey the hearths at Catoctin, but probably accepted general dimensions given by others.

[85] Svedelius, p. 33.

[86] Kemper, p. 12.

[87] Charles B. Dew, "David Ross and the Oxford Iron Works: A Study of Industrial Slavery in the Early Nineteenth Century South," William and Mary Quarterly, 31, No. 2 (1974): 189-224.

[88] Letter from James Stubblefield, Superintendent of the United States Armory, to Captain Wade, June 21, 1822. Microfilm Reel 21, vol. 6, p. 548, Harpers Ferry National Historical Park library, Harpers Ferry, West Virginia.

[89] Maryland Land Patent Books, BC & GS 18, p. 458.

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[3] _O. R._ 2, p. 809.

[4] _O. R._ 2, p. 814.

[5] _O. R._ 2, p. 822.

[6] _O. R._ 2, p. 824.

[7] _O. R._ 2, p. 825.

[8] _O. R._ 2, pp. 863-864.

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[11] _Journal of Proceedings_, pp. 145, 178.

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[15] Baltimore _American and Commercial Advertiser_, June 20, 1861, p. 4, col. 3; Charles Town _Virginia Free Press_, June 13, 1861, p. 1, col. 3.

[16] Baltimore _American and Commercial Advertiser_, May 18, 1861, p. 4, col. 1; May 22, 1861, p. 1, col. 4.

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[19] Rockingham _Register_, May 24, 1861, p. 2, col. 3.

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[26] O. R. 2, pp. 732-733.

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[41] O. R. 51, pt. 1, p. 665.

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[46] O. R. 19, pt. 1, pp. 542-543.

[47] O. R. 19, pt. 1, pp. 542-543.

[48] O. R. 19, pt. 1, p. 697.

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[50] O. R. 19, pt. 1, p. 863.

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[68] O. R. 19, pt. 2, pp. 441-442.

[69] O. R. 19, pt. 2, p. 442.

[70] O. R. 19, pt. 2, pp. 443, 451, 470.

[71] Edmund Randolph Brown, The 27th Indiana Volunteer Infantry (n.p., 1899) p. 268.

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[73] National Archives, Record Group 77, Records of the Office of Chief of Engineers (hereafter cited as RG 77), Letters Received, 1838-1866; Entries W2619 (1862), W2624 (1863), W2625 (1863), W2631 (1863), Box 189; Return of Officers and Hired Men, Statement of Work Done, and Statement for Money Expended. Separate returns for November, 1862; December, 1862; January, 1863; February, 1863; submitted by 1st Lt. John M. Wilson to Brig. Gen. John G. Totten. Hereafter stated as Wilson returns.^T

[74] National Archives, RG 77, Letters Received, 1838-1866; Entries W2638 (1863), W2639 (1863), Box 189. By Special Order from the Adjutant General's Office dated March 17, 1863, Wilson left Harpers Ferry. He appears at Yazoo Pass (Department of Tennessee) on April 9, 1863.

[75] O. R. 27, pt. 2, pp. 19-20.

[76] O. R. 27, pt. 2, p. 19.

[77] O. R. 27, pt. 2, pp. 20-21, 13.

[78] O. R. 27, pt. 2, p. 13.

[79] O. R. 27, pt. 2, pp. 14-15.

[80] O. R. 27, pt. 2, p. 26.

[81] Joseph W. Kirkley Papers, "History of the 7th Maryland Infantry." Library of Congress Manuscript Collection.

[82] O. R. 27, pt. 2, p. 28.

[83] O. R. 27, pt. 1, p. 60.

[84] O. R. 27, pt. 1, p. 61.

[85] O. R. 27, pt. 1, p. 114; pt. 3, pp. 401, 428.

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[90] Jubal A. Early, War Memoirs (Indiana University Press, 1960), pp. 371-376.

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[92] O. R. 37, pt. 1, p. 176.

[93] O. R. 37, pt. 1, pp. 181, 184-185; O. R. 43, pt. 1, p. 1020; James Montgomery Diary, July 4, 1864. Manuscript copy in collection of Harpers Ferry National Historical Park.

[94] Early, pp. 384; Lee and Karen Drickamer, ed., Fort Lyon to Harpers Ferry: On the Border of North and South with "Rambling Jour" (Shippensburg, Pa: White Mane Publishing Co., 1987), p. 193.

[95] O. R. 37, pt. 1, pp. 185-186.

[96] O. R. 37, pt. 2, p. 542.

[97] O. R. 37, pt. 1, p. 182.

[98] National Archives, RG 94, 135th Ohio National Guard, Morning Reports, July 3-July 8, 1864.

[99] The Official Military Atlas of the Civil War (New York: Fairfax Press, 1983), Plate 84, No. 16; O. R. 37, pt. 1, p. 178.

[100] O. R. 43, pt. 1, p. 1020; O. R. 37, pt. 1, p. 180.

[101] Early, p. 385.

[102] O. R. 37, pt. 1, p. 182.

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CHAPTER V

[1] O.R. 19, pt. 2, p. 442.

[2] Cyrus B. Comstock Diary. Unpublished manuscript (#17650) at the Library of Congress. Hereafter cited as Comstock Diary.

[3] O. R. 19, pt. 2, pp. 451, 470-71.

[4] National Archives, RG 77, Records of the Office of Chief of Engineers, Letters Received, 1838-1866, W2619 (1862), W2624 (1863), W2625 (1863), W2631 (1863), Box 189; Wilson returns.

[5] National Archives, RG 77, Wilson Returns.

[6] National Archives, RG 77, Letters Received, 1838-1866, W2638 (1863), W2639 (1863). Wilson left Harpers Ferry for assignment at Yazoo on March 17, 1863, as directed by a Special Order from the Adjutant General's Office. O.R. 25, pt. 2, p. 425.

[7] National Archives, Record Group 108, Records of the Headquarters of the Army, Entry 22, in Box 72; 2337/B72. Hereafter cited as George Kaiser map.

[8] O. R. 25, pt. 2, p. 425.

[9] O. R. 25, pt.2, pp. 425-426.

[10] O. R. 27, pt. 2, p. 15.

[11] O. R. 27, pt. 2, p. 14.

[12] O. R. 27, pt. 2, p. 14; Suter's illustration appears in Cyrus B. Comstock's Diary.

[13] Charles W. Snell, "Harpers Ferry becomes a Fortress: September 21, 1862-October 6, 1863." Report on file at Harpers Ferry National Historical Park, p. 123. Hereafter cited as "Harpers Ferry becomes a Fortress."

[14] Snell, "Harpers Ferry becomes a Fortress," pp. 123-124.

[15] National Archives, Record Group 393, Records of the U.S. Army Continental Commands (hereafter cited as RG 393), pt. 2, Entry 1167, 1 of 2 1180, Vol. 53, pp. 127-128, Max Weber report.

[16] Charles W. Snell, "Harpers Ferry Repels an Attack and becomes the Major Base of Operations for Sheridan's Army, July 4, 1864, to July 27, 1865." Report on file at Harpers Ferry National Historical Park. pp. 60-61. Hereafter cited as "Harpers Ferry Repels Attack."

[17] William Chase stereograph of the Stone Fort, Harpers Ferry National Historical Park photograph collection, HF 1404.

[18] Comstock diary.

[19] National Archives, RG 77, Wilson returns.

[20] George Kaiser map.

[21] National Archives, RG 77, Wilson returns, February 1863.

[22] National Archives, RG 77, Wilson returns.

[23] O. R. 25, pt. 2, p. 425.

[24] O. R. 25, pt. 2, p. 425.

[25] O. R. 25, pt. 2, p. 425.

[26] O. R. 25, pt. 2, p. 425.

[27] O. R. 27, pt. 2, pp. 20-21.

[28] O. R. 27, pt. 2, p. 15.

[29] O. R. 25, pt. 2, p. 425.

[30] Ramsay Inspection Report in Snell, "Harpers Ferry Repels Attack," pp. 60-61.

[31] O. R. 25, pt. 2, pp. 424-425.

[32] O. R. 25, pt. 2, p. 425.

[33] O. R. 27, pt. 2, p. 15.

[34] O. R. 25, pt. 2, p. 426.

[35] O. R. 27, pt. 2, 15.

[36] Daniel H. Mowen, "Reminiscences of the Civil War by a Veteran in the Union Army." A series written for The Evening Globe, (Frederick, Md.), no publication dates. Compiled from notes by Kay Mowen. In collection at Harpers Ferry National Historical Park, Harpers Ferry, West Virginia.

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[39] National Archives, RG 393, Miscellaneous Uninventoried Records, 1821-1920; Letters Received, Inspector of Artillery, 1863, 10w2 24:8C; Letter from Col. P. A. Porter to Brig. Gen. Barry. Hereafter cited as Porter letter to Barry.

[40] Roe and Nutt, p. 224.

[41] Roe and Nutt, p. 222.

[42] Ramsay report appears in Snell, "Harpers Ferry Repels Attack," p. 82.

[43] O. R. 25, pt. 2, p. 426.

[44] National Archive, RG 393, Porter letter to Barry.

[45] National Archives, RG 94, 5th New York Heavy Artillery, Order Books, Companies E, G-M, November 30, 1863.

[46] Edwin M. Stanton Collection, Library of Congress Manuscript Collection, Map 57315; National Archives, RG 94, 5th New York Heavy Artillery, Order Books, Companies E, G-M.

[47] O. R. 37, pt. 2, p. 87.

[48] Ramsay report appears in Snell, "Harpers Ferry Repels Attack," p. 82.

[49] O. R. 25, pt. 2, p. 426.

[50] O. R. 25, pt. 2, p. 426.

[51] O. R. 27, pt. 2, pp. 14-15.

[52] Ramsay report appears in Snell, "Harpers Ferry Repels Attack," p. 82.

[53] O. R. 25, pt. 2, p. 428.

[54] O. R. 27, pt. 2, pp. 14-15.

[55] O. R. 27, pt. 2, p. 15.

[56] O. R. 12, pt. 1, pp. 626-27, 629, 631.

[57] Dahlgren, p. 61.

[58] O. R. 12, pt. 1, p. 634; O. R. 12, pt. 3, p. 292.

[59] Harper's New Monthly Magazine, May, 1867, p. 720.

[60] O. R. 12, pt. 1, p. 707.

[61] O. R. 51, pt. 1, p. 665.

[62] National Archives, RG 94, 8th New York Cavalry, Regimental Order Books, Special Order #70, June 18, 1862.

[63] Wingate, p. 58.

[64] National Tribune, November 21, 1912; O. R. 19, pt. 1, p. 697.

[65] O. R. 19, pt. 1, p. 69; National Tribune, November 21, 1912.

[66] O. R. 19, pt. 1, pp. 179-180; O. R. 19, pt. 2, p. 356; Roe and Nutt, p. 221.

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[69] O. R. 25, pt. 2, p. 426.

[70] O. R. 27, pt. 2, pp. 14-15; Porter map and letter to Gen. Barry.

[71] Ramsay report appears in Snell, "Harpers Ferry Repels Attack," p. 82.

[72] O. R. 19, pt. 1, pp. 541-542.

[73] O. R. 19, pt. 1, p. 543.

[74] O. R. 19, pt. 1, pp. 543, 853, 867; Willson, pp. 54, 67.

[75] O. R. 19, pt. 1, p. 570; Willson, p. 54.

[76] O. R. 2, p. 814.

[77] O. R. 2, p. 824; Charles Town Virginia Free Press, June 13, 1861, p. 1, col. 3.

[78] O. R. 2, p. 889.

[79] Harpers Weekly, June 20, 1861, p. 455; Charles Town Virginia Free Press, June 13, 1861, p. 1, col. 3.

[80] Baltimore American and Commercial Advertiser, June 20, 1861, p. 4, col. 3.

[81] Baltimore American and Commercial Advertiser, June 20, 1861, p. 4, col. 3.

[82] O. R. 2, pp. 732-733.

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[1] Revised United States Army Regulations of 1861 (Washington, D. C.: Government Printing Office, 1863), p. 74.

[2] Regulations of 1861, pp. 75-76.

[3] Regulations of 1861, p. 76.

[4] Regulations of 1861, p. 76.

[5] Regulations of 1861, p. 76.

[6] Regulations of 1861, p. 80.

[7] O. R. 2, pp. 717, 732.

[8] O. R. 2, p. 769.

[9] National Archives, RG 94, 5th New York Heavy Artillery, Order Books, Companies E, G-M, December 8, 1864.

[10] O. R. 25, pt. 2, p. 425.

[11] National Archives, RG 393, Pt. 2, Entry 5506, Vol. 7/12, 29, September 28, 1862 circular; October 8, 1862 circular; RG 94, 124th Pennsylvania, Clothing, Order, and Descriptive Book, Company B, October 23, 1862, Regimental Orders #12.

[12] National Archives, RG 94, 6th New York Heavy Artillery, Regimental Letter and Order Book, circular, 2nd Brigade, Maryland Heights, Brig. Gen. Morris, June 18, 1863.

[13] Morse, p. 14.

[14] Huyette, p. 4.

[15] Lewis Holt, "Letters to Caroline: Glimpses of Life and Valor through the Eyes of Civil War Infantrymen," October 16, 1862. Letters to Caroline Holt Flemings from her brother Lewis Holt, transcribed by Eleanor Flemings Munch, April, 1982. Unpublished manuscript in Harpers Ferry National Historical Park collection, p. 38.

[16] William J. Reichard, "Civil War Letters of William J. Reichard," Proceedings of the Lehigh County Historical Society (Allentown, Pennsylvania: H. Ray Haas and Company, 1958), p. 180 (October 21, 1862).

[17] Reichard Letters, pp. 179-180 (October 17, 1862).

[18] Wild, p. 30.

[19] Kirkley Papers, p. 32.

[20] Holt Letters, p. 51 (November 2, 1862).

[21] Theodore Irving, More than Conqueror or Memorials of Col. J. Howard Kitching (New York: Hurd & Houghton, 1878), p. 88.

[22] Reichard Letters, p. 193 (November 18, 1862).

[23] Reichard Letters, p. 198 (November 25, 1862).

[24] Kirkley Papers, p. 34.

[25] Roe and Nutt, pp. 13-14, 221.

[26] National Archives, RG 94, 5th New York Heavy Artillery, Morning Reports, Companies D, H-M.

[27] National Archives, RG 94, 10th Maryland Volunteer Infantry, Regimental Descriptive, Orders and Letters Book, July 27, 1863.

[28] National Archives, RG 393, Pt. 2, Entry 1174, vol. 62, p. 36, Special Order #10, April 20, 1864.

[29] National Archives, RG 94, 5th New York Heavy Artillery, Order Books, Companies E, G-M, Special Order #34, May 21, 1864.

[30] Frederick H. Dyer, A Compendium of the War of the Rebellion, vol. 2 (Dayton, Ohio: Press of Morningside Bookshop), p. 1236.

[31] Roe and Nutt, pp. 22, 62, 222.

[32] National Archives, RG 94, 5th New York Heavy Artillery, Morning Reports, Companies D, H-M; 8th New York Heavy Artillery, Morning Reports, Comapnies A, D-F.

[33] National Archives, RG 94, 5th New York Heavy Artillery, Order Books, Companies E, G-M.

[34] National Archives, RG 94, 5th New York Heavy Artillery, Order Books, Companies E, G-M.

[35] National Archives, RG 94, 5th New York Heavy Artillery, Order Books, Companies E, G-M.

[36] O. R. 19, v. 1, pp. 863-864.

[37] Roe and Nutt, pp. 59, 221; National Archives, RG 94, 5th New York Heavy Artillery, Morning Reports.

[38] Dyer, p. 1231.

[39] National Archives, RG 94, 10th Maryland Infantry, Regimental Description, Letter and Order Books.

[40] National Archives, RG 94, 5th New York Heavy Artillery, Morning Reports, Companies D, H-M.

[41] Kirkley Papers, pp. 31-32.

[42] National Archives, RG 94, 1st Maryland Infantry Order Books, Special Order #85, April 3, 1863.

[43] Lincoln, pp. 115-116.

[44] Henry A. Saunders Letters, July 12, 1863. Unpublished Manuscript in Harpers Ferry National Historical Park Collection.

[45] Gordon, p. 30; Alonzo H. Quint, The Record of the Second Massachusetts Infantry (Boston: James P. Walker, 1867), p. 42; Morse, p. 13.

[46] Charles Camper, Historical Record of the First Regiment Maryland Infantry (Washington, D. C.: Gibson Brothers, 1871), p. 89; National Archives, RG 94, 1st Maryland Volunteers, Order Books, Companies A-K, January 22, 1863; S. O. #85, April 3, 1863.

[47] National Archives, RG 94, 1st Maryland Infantry, Regimental Books (Letter Indorsement and Court Martial Book), March 5, 1863.

[48] National Archives, RG 94, 1st Maryland Infantry, Regimental Books (Letter Indorsement and Court Martial Book), March 5, 1863.

[49] National Archives, RG 94, 6th New York Heavy Artillery, Regimental Letter and Order Book, April 12, 1863; Morning Reports, Companies A-F; Companies G-M.

[50] National Archives, RG 393, Pt. 2, Entry 2192, vol. 4/6 39, p. 423 (September 22, 1862); Entry 6525, vol. 25, p. 42, Special Order #69, December 9, 1862; John M. Gould, History of the First, Tenth, Twenty-Ninth Maine Regiment (Portland: Stephen Berry, 1871), p. 265.

[51] Quaiffe, p. 138; Huyett, p. 57; Quint, p. 143.

[52] O. R. 37, pt. 1, p. 181.

[53] Wild, p. 29.

[54] Baltimore American and Commercial Advertiser, June 20, 1861, p. 4, col. 3.

[55] Baltimore American and Commercial Advertiser, June 20, 1861, p. 4, col. 3.

[56] O. R. 2, pp. 732-733.

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CHAPTER VII

[1] Antietam Iron Works Ledger Book, p. 130; Washington County Land Records 53, p. 64.

[2] Antietam Iron Works Ledger Book, p. 252, p. 355 and p. 361.

[3] Washington County Land Records IN 5, p. 623; 158, p. 451; 179, p. 516 and p. 546.

[4] Washington County Land Records 380, p. 388; Appraisal of Lot I, Stonebraker Heirs Notebook, John L. Swain Correspondence, Washington County Historical Society, Hagerstown, Maryland.

[5] Antietam Iron Works Ledger Book, p. 355; Washington County Land Records IN 10, p. 138; IN 15, p. 157; 118, p. 586; Washington County Will Books J, p. 186.

[6] Washington County Land Records 119, p. 657; 197, p. 584 and p. 586; 317, p. 456; 323, p. 45.

[7] Washington County Land Records 101, p. 543; Letter to Susan W. Frye from Harold T. King, owner of the King Lot, July 13, 1987; Washington County Tax Assessment Records 1896, District 11, p. 119. Marshall King was married to a woman named Emily, who was a former slave of Jessie and Virginia Moore. The Moore's farm was situated west of Weverton along the road to Sandy Hook (letter to the author from Harold T. King, March 4, 1988).

[8] Washington County Land Records 105, p. 680; 119, p. 698; Harold T. King letter, July 13, 1987. Mr. King provides the dates of construction for both the second and third houses.

[9] Washington County Tax Assessment Records, 1910, District 11, p. 143; Maryland Population Census Schedules, 1910, Washington County, Sandy Hook District, House No. 116; Harold T. King letter, July 13, 1987; Letter to Susan W. Frye from Harold T. King, owner of the King Lot, September 26, 1987. Bessie's maiden name was Fisher. According to Harold King, she was the daughter of Guy and Mary Fisher, former slaves of a family named Gray. The Gray farm was located south of Brownsville, between the road and the old railroad (King letter, March 4, 1988).

[10] Harold T. King letter, July 13, 1987; Washington County Tax Assessment Records, 1941, District 11, p. 81.

[11] Washington County Land Records IN 10, p. 567.

[12] Norris Family Papers, Collection of Everett and Frances Norris, Pleasant Valley, Washington County, Maryland. Interestingly, the 1860 population census schedule does not list the Norris family in the Sandy Hook District.

[13] Personal communication, Frances Norris to Susan W. Frye, January 24, 1988.

[14] Maryland Population Census Schedules, 1870, Washington County, Sandy Hook District, House No. 130; 1880, Sandy Hook District, House No. 120. In 1875, John Fenton married Margaret Virginia (Genie) Rucker from Ruckersville, Virginia. They met while he was employed as a carpenter by the B & O Railroad.

[15] Washington County Tax Assessment Records, 1896, District 11, p. 167 and p. 170; Washington County Will Books J, p. 90. John Fenton Norris and Elizabeth Norris each were assessed for 11 acres of land worth $44 and improvements valued at $100, while William A. Norris was assessed for 11 acres and improvements worth $150 and furniture valued at $24. In addition, Daniel Norris was appraised at $44 for 11 acres of land, $100 for improvements, $10 for furniture, and $42 for livestock. The fact that Daniel's land and improvements assessment is the same as that for his mother and brother John Fenton suggests the possibility that he and his brother William may have changed positions.

[16] Norris Family Papers. The rudimentary quit claim is written across part of a sheet of paper that once was part of a ledger dating from 1838. Although John Fenton's two sisters, Mary Jane Bagley and Ellen Scott, conveyed their interests in 1880, he did not receive the interests of his brothers, Daniel and William Ault, until 1884 and 1889, respectively; Washington County Tax Assessment Records, 1896, District 11, p. 167 and p. 170.

[17] Harold T. King letter, September 26, 1987; Washington County Tax Assessment Records, 1910, District 11, p. 202; Norris Family Papers. John Fenton Norris is buried in Fair View Cemetery in Keedysville, Maryland, although no stone remains to mark his grave site.

[18] Interview with Everett and Frances Norris, December 5, 1987.

[19] Harold T. King letter, September 26, 1987; Maryland Population Census Schedules, 1910, Washington County, Sandy Hook District, House No. 115. According to King, the front part of the house was used as a stable in the 1930s; Interview with Ruth Norris McGolerick, December 5, 1987.

[20] Washington County Tax Assessment Records, 1928, District No. 11, p. 159. Penciled beside John Fenton Norris was "c/o Mrs. Mary Faey and Everett E. Norris, Knoxville," which suggests John Fenton's financial concerns were under the care of his children by this date; Washington County Tax Assessment Records, 1941, District 11, p. 110. The tax assessment lists 22 acres along North Elk Ridge Rd. A building worth $25 is listed, but both the word "Building" and the amount "$25" are struck out.

[21] Washington County Land Records IN 5, p. 626; Claim of James H. Elgin; Volume K-2829, Entry 812, Record Group 92, National Archives.

[22] Harold T. King letter, September 26, 1987.

[23] Washington County List of Sales 36, p. 756.

[24] Washington County Land Records 113, p. 742.

[25] Maryland Population Census Schedules, 1900, Washington County, Sandy Hook District, Washington County, House No. 178; Washington County Land Records 116, p. 568; 119, p. 743; 196, pp. 516-517.

[26] Washington County Tax Assessment Records, 1910, District 11, p. 282; 1928, District 11, p. 221; Interview with Ruth Norris McGolerick, December 5, 1987; Letter to Mr. Summers from Alice W. Darton, November 23, 1957, Arthur Darton Notebook, Swain Correspondence. In this letter, Darton states regarding Lots L and M that "[t]here is a quarry on my land that supplied the stone for the B & O Canal along the Potomac River. . . . It still is a quarry capable of delivering stone."

[27] Washington County Land Records 331, p. 5; 408, p. 287; 823, p. 180.

[28] Washington County Land Records IN 5, p. 626; 114, p. 90; 116, p. 269.

[29] Washington County Land Records 126, p. 243; 165, p. 577.

[30] Wasington County Land Records 159, p. 111; 181, p. 633; 182, p. 291.

[31] Washington County Land Records 199, p. 219; 331, p. 5. Everett Norris was a son of John Fenton Norris. He owned a small farm on the north side of the intersection of Valley Road and Miller Avenue.

[32] Washington County Land Records IN 5, p. 766; IN 18, p. 87; WMcKK 3, p. 359; 758, p. 8.

[33] Washington County Land Records 75, p. 181 and p. 299; 94, p. 681.

[34] Washington County Land Records 104, p. 115; Maryland Population Census Schedules, 1900, Washington County, Sandy Hook District, House No. 68; 1910, Sandy Hook District, House No. 118; Washington County Tax Assessment Records, 1896, District 11, p. 47. The furniture in the 1896 assessment was valued at $8, the live stock at $2. By 1910, the value of the house and lot had fallen to $75, but the furniture was assessed at $25 (Washington County Tax Assessment Records, 1910, District 11, p. 56).

[35] Washington County Tax Assessment Records, 1987, District 11; Letter to Mrs. Frank W. Mish from Karl E. Pfeiffer, December 15, 1960, in file entitled "Acquisition of land, Maryland Heights, Harpers Ferry, 1961," Mary Mish Papers, Washington County Historical Society, Hagerstown, Maryland; Letter to Ralph H. Donnelly, surveyor, from Karl E. Pfeiffer, June 9, 1960, Ralph H. Donnelly Notebook, Swain Correspondence. A 1928 tax assessment (District 11, p. 41) lists R. E. Easton as owning one acre on Elk Ridge valued at $10 and buildings worth $15. All entries are crossed out, however, implying that Easton had not kept up his tax payments.

[36] Washington County Land Records 101, p. 537; 103, p. 532; 105, p. 6; 189, p. 530; 284, p. 532.

[37] Washington County Land Records 190, p. 407; 312, p. 465; 353, p. 177.

[38] Washington County Land Records IN 5, p. 620; IN 17, p. 35 and p. 739; WMcKK 6, p. 309; 75, p. 179.

[39] Washington County Land Records 75, p. 376; 136, p. 159; 349, p. 304; Washington County Chancery Court Records 42, p. 718; Appraisal of 704 3/8 Acre Tract of Land at Harpers Ferry, March 24, 1947, Appraisals and Titles, Volume 2, Swain Correspondence. No trace was discovered of the building listed in the appraisal.

[40] Washington County Land Records 91, p. 290; 103, p. 581; 106, p. 34; 758, p. 8; Washington County Chancery Court Records 32, p. 130. A plat made in 1911, however, shows the easternmost three acres of Lot O as belonging to Elgin Clark (see Edward Higgins Notebook, Swain Correspondence).

[41] Washington County Land Records 142, p. 65; 269, p. 554; 312, p. 82.

[42] Washington County Land Records IN 10, p. 359; 140, p. 605. No record was found explaining how Sarah A. Johnson acquired Lot P.

[43] Patent for Lost Lot, recorded December 21, 1912, and issued to Mary E. Clark, copy in Karl E. Pfeiffer Notebook, Swain Correspondence.

[44] Washington County Land Records 228, p. 421; Washington County Tax Assessment Records, 1928, District 11, p. 105.

[45] Washington County Land Records 235, p. 328; 250, p. 139; 263, p. 143; 336, p. 268.

[46] Washington County Land Records IN 7, p. 32 and p. 174; IN 13, p. 424; Washington County Chancery Court Records 14, p. 14.

[47] Washington County Land Records 110, pp. 551-552; Washington County Tax Assessment Records, 1987.

[48] Washington County Will Books M, p. 103; Washington County Tax Assessment Records, 1896, District 11; 1910, District 11, p. 100; Washington County Land Records 371, p. 517.

[49] Washington County Tax Assessment Records, 1922, District 11, p. 42; 1928, District 11, p. 76; 1941, District 11; Appraisal of Lot Q, June 24, 1961, Edward Higgins Notebook, Swain Correspondence.

[50] Washington County Land Records 126, p. 603; 153, p. 39; 370, p. 260; Appraisal of Lots 154 and R, William V. Marmion Notebook, Swain Correspondence.

[51] Washington County Land Records IN 5, p. 623; IN 7, p. 352; IN 12, p. 754; WMcKK 6, p. 706; 77, p. 386.

[52] Washington County Land Records 103, p. 458 and p. 459.

[53] Washington County Tax Assessment Records, 1896, District 11, p. 223; 1910, District 11, p. 6; 1928, District 11, p. 6; 1941, District 11, p. 5.

[54] Washington County Land Records IN 18, p. 268; IN 19, p. 568; 388, p. 359; Washington County Chancery Court Records 30, p. 641.

[55] Washington County Land Records IN 19, p. 675.

[56] Washington County Tax Assessment Records, 1896, District 11, p. 214; 1910, District 11, p. 250; 1928, District 11, p. 195; 1941, District 11, p. 133; Letter to John L. Swain from Karl E. Pfeiffer, December 5, 1962, Savin Heirs Notebook, Swain Correspondence.

[57] Washington County Land Records 55, p. 280 and p. 555; 56, p. 55; 125, p. 327.

[58] Washington County List of Sales 35, p. 637.

[59] Washington County Will Books 16, p. 497; Washington County Land Records 381, p. 68.

[60] Washington County Land Records 54, p. 289; Washington County Will Books H, p. 452; Edward D. Smith, "Historic Structure Report, The Stone House (Misnamed the Salty Dog Saloon) Opposite C & O Canal Lock 33, Historical Data, Harpers Ferry National Historical Park, W.Va.-Va.-Md." (Denver: Denver Service Center, National Park Service, 1980), pp. 18-20.

[61] Washington County Land Records 100, p. 605; Smith, p. 21.

[62] Washington County Land Records 167, p. 453; Smith, p. 28; Appraisal of 704 3/8 Acre Tract of Land at Harpers Ferry, March 24, 1947, Appraisals and Titles, Volume 2, Swain Correspondence; Letter to Karl E. Pfeiffer from Sterling L. Levie, February 8, 1956, Lyle M. Grove Notebook, Swain Correspondence. In 1947 the house was appraised at $13,000, the garage at $1,000. This was by far the most valuable property on Maryland Heights.

[63] Washington County Land Records 322, p. 87; Letter to Mrs. Hester G. Weaver from Karl E. Pfeiffer, May 6, 1959, E. Marion Weaver Notebook, Swain Correspondence.

[64] Antietam Iron Works Ledger Book, p. 346; Washington County Land Records 322, p. 87; 419, p. 65; Letter to Karl E. Pfeiffer from Harold H. Hoffman, June 8, 1962, Stonebraker Heirs Notebook, Swain Correspondence. In the deed conveying Maryland Heights to the United States, the State of Maryland lists both Lots 142 and 143 under the conveyance from Hester G. Weaver and others to the State.

[65] Washington County Land Records 51, p. 51; 54, p. 748 and p. 750.

[66] Washington County Land Records 72, p. 594; 186, p. 52; 259, p. 305; 322, p. 87.

[67] Washington County Land Records 51, p. 49; 54, p. 748 and p. 750; 72, p. 594.

[68] Washington County Land Records 219, p. 327; 269, p. 338; 387, p. 74. The Groves purchased the two acre tract in 1941, and the one acre tract in 1950. Apparently title to Lot 145, as well as Lot 144, was uncertain, prompting the State to draw up a confirmatory deed with the heirs of John F. Kilham, the Groves, and the Weavers to establish clear title.

[69] Letter to Mr. Karl E. Pfeiffer from Sterling L. Levie, February 8, 1956; and Letter to Mrs. Frank W. Mish from Karl E. Pfeiffer, April 30, 1956, Lyle M. Grove Notebook, Swain Correspondence; Washington County Land Records 320, p. 210.

[70] Washington County Land Records 53, p. 141; 54, p. 748 and p. 750.

[71] Washington County Chancery Court Records 13, p. 383.

[72] Washington County Land Records 72, p. 594.

[73] Maryland Population Census Schedules, 1900, Washington County, Sandy Hook District, House 121; Washington County Tax Assessment Records, 1896, District 11, p. 117; Washington County Land Records 129, p. 93.

[74] Washington County Land Records 339, p. 342.

[75] Appraisal of the Land owned by Heirs of James D. Kilham, Deceased, James D. Kilham Notebook, Swain Correspondence.

[76] Washington County Land Records 53, p. 485; 51, p. 48; 155, p. 1; 321, p. 506.

[77] Washington County Land Records 104, p. 280; 105, p. 6; 284, p. 532.

[78] Washington County Land Records 51, p. 534 and p. 756; 91, p. 350; Washington County Chancery Court Records 53, p. 552.

[79] Washington County Land Records 153, p. 269; 165, p. 454 and p. 455; 191, p. 170; 220, p. 371; 362, p. 719.

[80] Washington County Land Records 126, p. 604; 153, p. 39; 370, p. 260.

[81] Washington County Land Records 51, p. 566; 64, p. 286; 104, p. 6; 105, p. 6; 189, p. 530; 284, p. 532.

[82] Washington County Land Records 53, p. 478; 55, p. 287; 94, p. 490; 152, p. 690.

[83] Washington County Land Records 153, p. 366; 156, p. 38 and p. 130; 169, p. 636; 176, p. 368; 180, p. 227; 181, p. 149; 219, p. 331 and p. 332; 378, p. 195.

[84] Washington County Land Records 51, p. 382 and p. 383; 57, p. 143; 69, p. 108; 78, p. 414.

[85] Washington County Land Records 124, p. 601; 226, p. 179; 258, p. 377; 276, p. 638; 354, p. 44.

[86] Washington County Land Records 54, p. 289; 68, p. 162; 72, p. 228 and p. 271; Washington County Trustee's Sale of Real Estate 2, p. 240.

[87] Washington County Land Records 73, p. 157; 81, p. 286; 85, p. 58; 88, p. 118; 89, p. 266; 348, p. 122.

[88] Washington County Land Records 53, p. 516; 56, p. 260; Washington County Will Books F, p. 482.

[89] Smith, p. 9.

[90] Smith, p. 9. Reed also never officially received title to the land.

[91] Smith, pp. 19-21; Washington County Land Records 53, p. 516; 56, p. 260; Washington County Will Books F, p. 482.

[92] Smith, pp. 23-25.

[93] Smith, pp. 25-26; Washington County Land Records 146, pp. 26-27; Washington County Will Books 15, p. 156. Albertus Spencer died sometime between 1927 and 1930. Until his death, Spencer continued to operate a store and restaurant on the first floor of the frame house.

[94] Smith, pp. 27-28; Washington County Land Records 176, p. 354.

[95] Smith, pp. 29-30. Edgar Spencer Weaver died in 1931. Some people have suggested that the Salty Dog Saloon also operated as a brothel, but no proof exists for this assertion.

[96] Smith, p. 31; Washington County Land Records 245, p. 7; 275, p. 135; 342, p. 770; Harpers Ferry Acquisition Program sheet, Lester Gaskins Notebook, Swain Correspondence.

[97] Smith, pp. 31-32; Letter to Mr. Frank H. Anderson, Superintendent, Harpers Ferry National Monument, from Karl E. Pfeiffer, Consultant, April 22, 1960, Karl E. Pfeiffer Notebook, Swain Correspondence.

[98] Washington County Land Records 125, p. 278.

[99] Washington County Land Records 273, p. 552; 354, p. 646; Appraisal of 704 3/8 acre Tract of Land at Harpers Ferry, March 24, 1947, Appraisals and Titles Notebook, Volume 2; Appraisal of Gaskins Lot, October 21, 1959, Lester Gaskins Notebook, Swain Correspondence.

[100] Letter to Mrs. Frank W. Mish from Karl E. Pfeiffer, Consultant, December 15, 1960, in file entitled "Acquisition of Land, Maryland Heights, Harpers Ferry, 1961," Mary Mish Papers; Letter to Mr. Arthur B. Darton from Karl E. Pfeiffer, April 9, 1957, Arthur Darton Notebook, Swain Correspondence.

[101] All of the Antietam Iron Works conveyances along the east side of the mountain mention this road. An example is a deed from Meredith and Nicholas to the Stonebrakers for Lots I, S and Z (Deed Book IN5, p. 624), "excepting and reserving thereout and therefrom, for the benefit of the whole range of Lots, from A to Z, the unmolested use of a road thirty feet wide." Although the entire length of this road can be traced today, it is questionable how much was in actual use in 1850. The road probably was part of the earlier charcoaling industry.

[102] Washington County Land Records IN 10, p. 567.

[103] Comparisons with other recorded distances on the 1863 Michler map reveal that, on the whole, it was surveyed with great accuracy. It must be admitted, however, that the structures and other walls in Lot K appear foreshortened.

[104] Washington County Land Records 101, p. 543, June 13, 1893. The metes and bounds for the King Lot state "Beginning for the parcel hereby conveyed at a stone planted on the east side of the mountain road, east of Daniel Norris stable . . ."

[105] Maryland Population Census Schedules, 1880, Washington County, Sandy Hook District, House No. 120.

[106] Washington County Tax Assessment Records, 1896, District 11, p. 167; Washington County Will Books J, p. 90.

[107] Harold T. King letters, September 26, 1987 and December 18, 1987; Personal communication, Frances Norris to Susan Frye, January 25, 1988.

[108] Interview with Ruth Norris McGolerick, December 5, 1987; Harold T. King letter, December 18, 1987.

[109] Harold T. King letter, September 26, 1987; Personal communication, Frances Norris to Susan W. Frye, January 25, 1988.

[110] Interview with Everett and Frances Norris, December 5, 1987.

[111] Personal communication, Frances Norris to Susan Frye, January 25, 1988; Harold T. King letter, September 26, 1987.

[112] Personal communication, Frances Norris to Susan Frye, January 25, 1988.

[113] Harold T. King letter, September 26, 1987.

[114] The 1910 and 1928 tax assessment records for the Johnson family reveal no improvements on Lot P, yet deeds from 1944 onward convey Lot P "with the improvements thereon."

[115] Washington County Land Records IN 10, p. 359; 140, p. 605.

[116] Washington County Chancery Court Records 14, p. 14.

[117] Washington County Chancery Court Records 14, p. 14; Washington County Land Records 110, p. 551. The 1860 population census schedules for Washington County list no Dearings in the Sandy Hook District.

[118] Harold T. King letter, July 13, 1987.

[119] Washington County Land Records 110, p. 551.

[120] Washington County Land Records 110, p. 551 and p. 552.

[121] Washington County Tax Assessment Records, 1910, District 11, p. 100; Washington County Land Records 371, p. 517.

[122] Washington County Land Records WMcKK 6, p. 706; 77, p. 386.

[123] Washington County Chancery Court Records 32, p. 130.

[124] Washington County Land Records IN 18, p. 268; IN 19, p. 568; 388, p. 359.

[125] Washington County Chancery Court Records 13, p. 383.

[126] Morse, p. 13. Kilham most likely never lived on Maryland Heights himself. In the 1860 population census, he is listed as 66 years old with real estate valued at $3,000.

[127] O. R. 19, Vol. 1, p. 719.

[128] Washington County Land Records 72, p. 594.

[129] Washington County Tax Assessment Records, 1896, District 11, p. 117.

[130] Smith, pp. 9-28, passim.

[131] Smith, pp. 25-30, passim.

[132] Harold T. King letter, July 13, 1987.

[133] Maryland Population Census Schedules, 1870, Washington County, Sandy Hook District; 1880, Sandy Hook District, House No. 101. According to Harold King, Gaizem and Mary Beener were living in the house in 1880, but he does not state that there were any kinship ties between the Beeners and Kings. Prior to the Civil War, the Beeners were part of the Hefflebower slaveholdings (King letter, March 4, 1988).

[134] Washington County Land Records 105, p. 680; 119, p. 698; Harold T. King letter, July 13, 1987.

[135] Harold T. King letter, September 26, 1987.

[136] Harold T. King letter, September 26, 1987.

[137] Harold T. King letter, July 13, 1987.

[138] Washington County Land Records 94, p. 681; 104, p. 115. Concerning the Easton Lot, Harold King states that Tilman Easton, a Civil War veteran, had John Fenton Norris build the house in 1895. During that time, Easton's wife Rebecca and their three sons--William, Thomas and Edward--lived in Connelsville, Pennsylvania. Once the house was completed, they moved to Maryland. Rebecca was a sister of Virginia (Genie) Norris, John Fenton's wife (letter dated December 11, 1987). According to Frances Norris (personal communication, January 25, 1988), the Easton family originated in the Rhorersville area. Tilghman E. Easton is buried in the Virts cemetery near Rt. 340. He died August 24, 1894, aged 46 years and 11 months (Washington County Cemetery Records, Volume IV, Sandy Hook District).

[139] Harold T. King letter, December 18, 1987.

[140] Washington County Land Records WMcKK 3, p. 359; Maryland Population Census Schedules, 1870, Washington County, Sandy Hook District, House No. 129. In the census, Grove is identified as a day laborer 35 years old, with a 37-year-old wife Sarah and four children ranging in age from 5 to 12.

[141] Harold T. King letter, December 18, 1987.

[142] Washington County Land Records 136, p. 159; 349, p. 304; Washington County Chancery Court Records 42, p. 718; Washington County Tax Assessment Records, 1896, District 11, p. 179.

[143] Harold T. King letter, September 26, 1987.

[144] Joan H. Geismar, The Archaeology of Social Disintegration in Skunk Hollow, a Nineteenth-Century Rural Black Community (New York: Academic Press, 1982), p. 193.

[145] Harold T. King letter, September 26, 1987.

[146] William C. Theriault, "History of Bakerton," Magazine of the Jefferson County Historical Society, 51 (1985).

[147] The log structure on the historic Unseld farm measures 22 x 19.5 ft and is 1 1/2 stories high. The exterior is covered with board-and-batten siding.

[148] Personal Communication, Frances Norris to Susan Frye, January 25, 1988.

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CAMPGROUND AREAS
FEATURE DESCRIPTIONS

Campground Area 1

Feature CA1-F1. A rectangular (6 x 4 ft), leveled tent platform cut into the slope on its east and south sides. The other sides are built up with stone rubble. A line of stone extends along the south edge. The platform is in poor condition and slopes toward the west.

Feature CA1-F2. A rectangular (13 x 9 ft), leveled tent platform built up along its west edge with a crude, dry-laid stone retaining wall that stands about 1.5 ft high. The platform is edged with scattered stone along its other sides. It cuts into the slope on its east side.

Feature CA1-F3. A stone alignment eight feet in length lying on top of a rock outcropping and extending in a general east-west direction. This dry-laid stone wall is about 1.5 ft wide and stands about 1.5 ft high.

Feature CA1-F4. Remnant of a probable dry-laid stone retaining wall/alignment approximately ten feet in length that extends in a general north-south direction. No defined width as it disappears into the slope along its back edge.

Feature CA1-F5. A poorly-preserved, three-sided, dry-laid stone hut or tent foundation open to the north with interior dimensions of 6 x 5.5 ft. The feature is constructed into the slope on its east side. The poorly-defined walls resemble stacked rubble; they are about two feet wide and stand about one foot high.

Feature CA1-F6. Fairly well-preserved, dry-laid stone hut or tent foundation with an apparent entrance in the southwest corner opening toward the west. The interior dimensions of the feature are 6 x 6 ft, with the stone roughly faced on the interior. The exterior sides are composed of battered rubble. The walls range from 1 (west wall) to 2.5 ft (east wall) thick. The east wall banks into the slope. A possible stone alignment extends between Features CA1-F5 and CA1-F6, but it was not definable enough to map.

Feature CA1-F7. A three-sided, dry-laid stone foundation open to the north with interior dimensions of 4.5 x 3.5 ft. The walls are crudely constructed of stacked stone about 0.5 ft high. The west wall is two feet thick, the south wall 2.5 ft, and the east wall undefinable (may have been constructed into slope on that side). It may have functioned as a small hut or tent foundation.

Feature CA1-F8. A possible, poorly-defined, dry-laid stone hut or tent foundation that opens toward the north/northeast. The east wall is 2.5 ft wide, the west wall 1 ft, and the south wall 1.5 ft.

Feature CA1-F9. A poorly-defined tent platform/hut foundation cut into the slope. The feature is lined with stone on three sides and opens toward the north. The interior dimensions are 5.5 x 5 ft, with north and south walls roughly 2.5 ft thick and the east wall two feet wide.

Feature CA1-F10. A poorly-defined, possible dry-laid stone hut or tent foundation. There is one clear stone alignment on the south side about seven feet long and 1.5 ft wide. A shorter and less defined alignment four feet in length lies along the north side. Along the east side is a possible alignment of stone about six feet long; between this alignment and the first two is a three-foot gap.

Feature CA1-F11. A crudely-constructed, dry-laid stone alignment six feet in length with a crude west face. It is 1.5 ft wide and stands 1.5 ft high. The alignment extends in a general north-south direction.

Feature CA1-F12. A circular Sibley tent platform 17 ft in diameter with a shallow ditch about two feet wide surrounding it. The platform is relatively level and stone free. Scattered stone lies around the exterior edge of the ditch.

Feature CA1-F13. A square (4.6 x 4.4 ft along exterior sides), dry-laid stone box or pit set into the ground. When the leaf mold was removed from the center a stone base was revealed. The function of this feature is unknown.

Feature CA1-F14. A poorly-defined stone foundation (possibly for a hut) with only two walls--east and north--presently definable. The exterior dimensions are 15 x 10 ft. The dry-laid stone walls appear to be about 1.5 ft wide and stand about one foot high. The interior contains scattered rubble, with a concentration near the north wall.

Feature CA1-F15. A fairly well-defined, dry-laid stone hut or tent foundation with interior measurements of 6 x 4 ft. The east and west walls are two feet thick; the north "wall" consists of a thick concentration of stone 3.5 ft wide. Along the east wall and the east end of the north wall is a crudely-defined interior face that stands approximately 1.5 ft high. A short south wall segment defines a south-facing entryway in the southwest corner. This feature may have guarded access into Campground Area 1 from Road H.

Campground Area 2

Feature CA2-F1. A large, dry-laid stone blockhouse or guardhouse foundation located on the south side of the only entrance into the Exterior Fort. It is composed of two separate structures. The structure on the north end measures 20 x 18 ft along its exterior sides and consists of three walls. Of these, the south wall is the best preserved . The east and north walls are defined only by low-lying wall alignments. There is no apparent west wall. The interior is filled with rubble.

The south structure is cruder and abuts against the south wall of the first structure. It is comprised of mounded rubble that forms crude west and south walls. The interior is rubble-filled. There possibly may have been a west wall, as several stones form an alignment along this side. The area immediately surrounding this feature is very rocky and there are no apparent roads or paths leading to it.

Feature CA2-F2. A long (app. 500 ft), meandering, linear stone alignment that extends in a general southward direction from the Exterior Fort. It varies greatly in width and amount of stone. The feature becomes increasingly well defined as it extends south. There is a break in the wall where Road KK passes through it; it appears that the wall was moved aside to allow passage of the road. This wall may define the west boundary of Campground Area 2, although an undefined number of ephemeral tent platforms appear along the relatively steep slope on the west side of the wall.

Feature CA2-F3. A dry-laid stone hut or tent foundation with interior measurements of 5 x 4 ft and open toward the south. It consists of three loose rubble "walls" that have some interior definition, but become piled rubble along their exterior edges. The feature lies on the east edge of the plateau, near the base of a short slope leading to the crest. The east and west walls are about two feet wide, and the north wall is three feet thick.

Feature CA2-F4. A cleared, circular Sibley tent platform 16 ft in diameter. Stone is piled up around the exterior edge.

Feature CA2-F5. A cleared, circular Sibley tent platform 16 ft in diameter. Stone lines the exterior edge, and is concentrated particularly along the southeast side.

Feature CA2-F6. A small, three-sided, dry-laid stone hut or tent foundation with interior dimensions of 6 x 5 ft and open toward the east. The south wall is the best defined and two feet wide; no real definition exists for the north and west walls. Numerous small stones fill the interior. Adjoining the open, east end is a rectangular, flat, stone-free area that also measures about 6 x 5 ft.

Feature CA2-F7. A possible stone hut foundation/tent platform measuring eight feet square that consists of a relatively flat, stone-free area surrounded by rubble alignments. The south alignment has a well-defined interior edge, while the north and east walls are composed of heaped rubble. The feature appears to be open to the west. There are no defined exterior sides.

Feature CA2-F8. An ill-defined, rectangular (8 x 5.5 ft) and leveled tent platform cleared of stone, but lined with rubble along three sides and open toward the south. There are no defined exterior edges.

Feature CA2-F9. An ill-defined tent platform six feet square that has been cleared of stone and leveled. Stone rubble lines the edges.

Feature CA2-F10. A possible dry-laid stone hut or tent foundation that appears to be open to the west. The interior dimensions of the feature are 9 x 6 ft. The south side is composed of rubble about three feet wide, while the east and north sides are defined only by an interior edge of stone.

Feature CA2-F11. A circular Sibley tent platform 15 ft in diameter and cleared of stone. In the center of the feature is a small pile of stone. Rubble lines the outside edge of the circle.

Feature CA2-F12. A dry-laid rubble alignment that is ten feet in length, five feet wide, and extends in a general north-south direction.

Feature CA2-F13. A dry-laid stone wall six feet long, two feet wide and two feet high. Rubble packs against the north side of the feature and may serve as a support for the wall. On the south side lies a relatively flat and stone-free tent platform that measures approximately 6 x 8 ft.

Feature CA2-F14. A dry-laid stone wall ten feet long, about 1.2 ft high, and ranging from 1 to 2.5 ft in width. The south face is well-defined; the north side, however, lacks definition. Along the south side of the feature lies a slightly depressed, stone-free area that was too vaguely defined to be mapped.

Feature CA2-F15. A well-defined, dry-laid stone hut foundation with rough interior dimensions of 6 x 5.5 ft. In the northwest corner is a north-facing entrance. The north wall is three feet wide and the east wall two feet in width, while the west wall varies between three to four feet. The south wall has been disturbed extensively by a tree growing along its south edge. The north and east walls stand slightly more than one foot high, while the other walls more closely resemble collapsed rubble.

Feature CA2-F16. A three-sided, dry-laid stone hut or tent foundation open to the west with interior dimensions of 8 x 5 ft. The north and south walls are two feet thick, the east wall a more substantial three feet. The southeast corner stands about 1.5 ft high and is crudely faced on the interior side. A flat, stone-free area about the same size as the foundation adjoins its north wall, but was too ephemeral to map.

Feature CA2-F17. An ill-defined, rectangular to square (8 x 7 ft) leveled tent platform cleared of stone, but lined with rubble along all but its south side. A west "wall" about two feet in width is the best defined portion of the feature. It consists of piled rubble with little evidence of a defined interior face. An exterior edge for the north and east sides could not be determined.

Feature CA2-F18. A rectangular to square (7 x 6 ft) leveled tent platform cleared of stone, but lined with rubble on all four sides. This rubble is especially apparent along the west edge. To the west of this feature are at least four additional leveled areas, but they did not have stone alignments that defined them sufficiently for mapping. These leveled areas appear to extend in a row to Feature CA2-F2, a stone fence.

Feature CA2-F19. A small, circular depression about four feet in diameter and one foot deep. This feature sits on the west edge of a rocky area. Ephemeral, leveled tent platforms are located around this feature, but they are too indefinite to map accurately.

Feature CA2-F20. An irregularly-shaped depression about 1.5 ft deep and measuring 4 x 4 ft along its best-defined sides. This feature is in alignment with a circular depression (CA2-F19) to the north and another depression (CA2-F31) to the south.

Feature CA2-F21. An ephemeral, rectangular-to-square tent platform measuring about 8 x 7 ft. The edges are defined only by scattered rubble. This feature lies on the very edge of a rocky area.

Feature CA2-F22. A small, dry-laid stone hut or tent foundation open toward the west. The feature has interior dimensions of 6 x 3.5 ft. The east and north walls are about two feet thick, and the south wall is three feet wide. The crude, interior face stands about one foot high. Trees growing in the southwest and northeast corners have distorted the feature.

Feature CA2-F23. An ill-defined, rectangular (app. 9 x 7 ft) and leveled tent platform defined by stone rubble along its edges. The south line of rubble is the best defined and about two feet wide.

Feature CA2-F24. A well-preserved, dry-laid stone hut or tent foundation open to the south and measuring 6.5 ft square along its interior sides. The east wall is two feet wide, with a nice interior face three courses high (1.5 ft). The south wall also is about two feet wide, and the north wall 2.5 ft; no well-defined interior face is apparent along these two walls. The walls are skewed slightly to each other.

Feature CA2-F25. An oddly-shaped, and in some places ill-defined, dry-laid stone foundation of unknown function. There appears to be a single rubble wall along the north side that is 20 ft long, about 1.5 ft thick and faced on both sides. In the middle of this wall, on its south, or interior, side, is a small wall stub 2.5 ft wide that extends to the south for 2.5 ft. East of this wall stub, the interior face of the main wall stands about 2.5 ft high. The well-defined east wall of the feature extends six feet in length. The west wall is skewed to the rest of the foundation and trails off in rubble, suggesting that it has been disturbed. The interior corners on both ends of the main wall appear to be slightly rounded. Extending off the south end of the east wall is a short wall segment, the only evidence for a south wall.

Feature CA2-F26. A stone rubble concentration roughly rectangular in shape and measuring about 10 x 5 ft. It does not appear to be structural in origin.

Feature CA2-F27. A circular, stone-free Sibley tent platform 15 to 16 ft in diameter and defined primarily by stone rubble around its outside edge. A faintly perceptible ditch extends around this edge as well. Along the south end lies a roughly rectangular (8 x 5 ft) rubble concentration that vaguely resembles a dry-laid stone foundation in configuration, although rubble occupies the interior.

Feature CA2-F28. An amorphously-shaped rubble concentration with no apparent structural association. It is roughly rectangular to triangular in shape and measures 9 x 7 feet along its two best-defined sides.

Feature CA2-F29. A large, rectangular (14 x 12 ft) and leveled tent platform cleared of stone and defined by scattered rubble around its edges. In the southeast corner is a possible stone-lined entryway about three feet wide. On the south side of the feature lies a stone rubble concentration roughly rectangular in shape that measures about 8 x 6 ft.

Feature CA2-F30. A very poorly-defined, rectangular (7.5 x 6.5 ft) tent platform lined with stone rubble on three sides; it appears to be open toward the southwest.

Feature CA2-F31. A small, shallow and circular depression about four feet in diameter. Several faint, leveled tent platforms surround this feature, but were too ephemeral to map.

Feature CA2-F32. A small, shallow and circular depression about four feet in diameter with rubble around its edges. Several faint, leveled tent platforms surround this feature, but were too ephemeral to map.

Feature CA2-F33. A shallow, rectangular to square (7 x 6 ft) depression. The sides of this depression slope gradually.

Feature CA2-F34. A basically circular hole about 22 ft wide and five feet deep, with steep sides that end in a roughly rectangular base. A rubble wall (Feature CA2-F2) extending along the north side of the feature is covered by a mound of dirt that probably resulted from the excavation of the hole. Extending eastward from this feature to a stone pile/foundation (Feature CA2-F37) is a low-lying ridge of stone rubble that presently is covered by humus. This circular hole probably served as a magazine or other storage area.

Feature CA2-F35. A small, shallow, and circular depression four feet in diameter.

Feature CA2-F36. A small, shallow, circular to rectangular depression four feet across. Some stone rubble defines the top edge of the feature.

Feature CA2-F37. An apparent mounded stone pile with a circular base about 14 ft in diameter. On the northwest side of the feature is a distinct, dry-laid corner that begins about two feet above the ground surface and is underlain by rubble. On its east side this corner appears to disappear beneath overlying stone rubble, while the indistinct south end may be disturbed.

Also mapped as part of this feature is a low-lying rubble alignment 25 ft in length, about three feet wide and which extends from the stone mound westward toward a deep hole (Feature CA2-F34). The west end of this alignment appears to have been disturbed heavily by the present Maryland Heights hiking trail.

Feature CA2-F38. A small, square (5 x 5 ft) pit/depression lined with a crude, dry-laid stone retaining wall on all four sides.

Feature CA2-F39. A square to circular hole ten feet in diameter and about three feet deep at its deepest point along the west side. A few stones line the top edge.

Feature CA2-F40. A linear stone concentration 15 ft long and four feet wide. It stands about one foot high and extends in a general east-west direction.

Feature CA2-F41. A well-preserved, three-sided, dry-laid stone hut or tent foundation with interior dimensions of 8 x 5 ft and open to the west. A crude interior face on the south and east walls stands about 2.2 ft high. The north interior face has collapsed in most areas, although the exterior side has good definition. The north wall is about three feet wide; a tree growing in the southeast corner of the feature has disturbed the other two walls to the point where they have lost much of their exterior definition. Adjoining the exterior side of the east wall is a small, cut-out area or chamber that measures 3 x 4-5 ft and is open to the east.

A low-lying, linear embankment with rubble fill extends from the northeast corner of the foundation. This alignment is 50 ft long and eight feet wide, with a hint of a ditch on the west side. A rectangular depression measuring 9 x 6 ft and filled with rubble nestles between the west side of the embankment and the north wall of the foundation.

Feature CA2-F42. A possible foundation defined by low-lying rubble embankments about four feet in width. Two corners--the southeast and southwest--are defined. The south side is exactly 20 ft long from the exterior edge of each corner. The east side extends about 55 ft, and the west side 64 ft, before fading out. The east alignment is in line with the southwest corner of Feature CA2-F41, and it is exactly 60 ft from that corner to the southeast corner of that feature.

Feature CA2-F43. A short, meandering rubble wall ranging from four to five feet in width. The central, or main, section is about 50 ft long and extends in a general north-south direction. Extending from each end of the main section are shorter walls that angle in a general westward direction. This feature appears to fill a gap between two longer walls, CA2-F2 and CA2-F45, that extend north and east of this feature, respectively. Thus the wall may have guarded an entryway into the north half of Campground Area 2.

Feature CA2-F44. A rectangular depression measuring approximately 13 x 8 ft and about two feet in depth. This feature abuts against a rubble wall (CA2-F45) that has partially collapsed into the depression. Along the top, west edge of the feature is a concentration of stone. The sides of the depression slope gradually. This feature may have been the base of a structure constructed against the wall--perhaps a guardhouse located at the entryway into the north half of Campground Area 2.

Feature CA2-F45. A rubble wall that begins near the west end of the plateau on which Campground Area 2 sits and extends eastward across the plateau to the base of the slope leading up to the crest. It continues up the slope as a well-preserved, dry-laid stone wall about three feet wide and three feet high. Near the east end of the crest it forms a corner with a stone wall mapped as Feature CA4-F9 that extends to the north. This wall may have formed a camp boundary, and definitely separates the north half of Campground Area 2 from the south half.

Feature CA2-F46. A rectangular, tiered stone pile that measures roughly 9 x 7 ft along its base. The south and west sides along the base form crude faces. Above and set back from these sides is a tier with clear faces along its south and west sides also. The other two sides of the feature lack definition and appear to have collapsed.

Feature CA2-F47. Unusual feature of unknown function composed primarily of a line of stone rubble 45 ft in length that extends north-south along the base of a short, steep slope leading to the crest. The feature varies greatly in width, and some sections have intact faces that stand about 3.5 ft high. The facing stones are larger than the rubble fill behind them. Extending a short distance from the middle of the west side of the rubble alignment is a short, well-defined wall stub with three finished sides.

Feature CA2-F48. A well-preserved, rectangular (8 x 6 ft), dry-laid stone hut or tent foundation constructed against a short, steep slope leading to the crest. The east, or back side, has collapsed in most areas. The north and south walls are 3.5 ft thick, the west wall two feet wide. There is no apparent entryway in any of the walls. The interior is filled with rubble from the collapse of the east side.

Feature CA2-F49. A rounded stone pile about eight feet in diameter. It is mounds toward the center, but stands only about two feet high.

Feature CA2-F50. A rounded stone pile about 10 to 12 ft in diameter and composed of scattered stone. It stands about two feet high.

Feature CA2-F51. A circular stone pile about eight feet in diameter. It stands about two feet high.

Feature CA2-F52. A small, circular stone pile about five feet in diameter and composed of compacted, mounded rubble two feet high.

Feature CA2-F53. An ill-defined, shallow, rectangular depression measuring 10 x 7 ft and 1.2 ft deep. This feature may have functioned as the base of a structure or tent platform.

Feature CA2-F54. An amorphously-shaped, shallow depression measuring roughly six to seven feet across. Stone rubble lies in the center of the depression, although stone is virtually absent in the surrounding area. This feature may have functioned as the base of a structure or tent platform.

Feature CA2-F55. A rounded stone concentration about eight feet in diameter. It is slightly mounded and stands about 1.5 ft high. Along the west edge is a defined "face" about five feet in length.

Feature CA2-F56. A roughly circular stone concentration eight feet in diameter. It is slightly mounded and stands about 1.5 ft high.

Feature CA2-F57. A rounded stone concentration about seven feet in diameter. It is slightly mounded and stands about 1.5 ft high.

Feature CA2-F58. A small, amorphously-shaped stone concentration about six feet across. It is composed of scattered stone about one foot high.

Feature CA2-F59. An irregularly-shaped stone concentration about seven feet across and composed of scattered stone that stands about one foot high. One whole brick was found with the stone.

Feature CA2-F60. A stone scatter with no apparent structural integrity. The greatest concentration of stone is found along the west end of the feature. This concentration is square (6 x 6 ft) in configuration and stands about 1.5 ft high. The east half is comprised of scattered stone that is more irregular in shape and stands only about one foot high.

Feature CA2-F61. A three-sided, dry-laid stone hut or tent foundation with interior dimensions of 6 x 4 ft and open to the south. The east wall is the best preserved and is three feet wide. The poorly-defined north and west walls consist primarily of alignments of single stones 1 to 1.5 feet wide. There are no defined interior wall faces.

Feature CA2-F62. A heavily-disturbed, dry-laid stone hut foundation with interior measurements of 6 x 2.5 ft that appears to be open to the north. The walls are about 2.5 ft wide and stand roughly one foot high.

Feature CA2-F63. A low-lying, square (5 x 5 ft) stone concentration that stands one foot high.

Feature CA2-F64. A very small, scattered stone concentration about three feet wide and one stone in height.

Feature CA2-F65. A roughly circular stone concentration about six feet in diameter and one foot high.

Feature CA2-F66. A rounded stone concentration about seven feet wide and one foot high. The center of the feature is cleared of all stone, suggesting it may have been a structure at one time.

Feature CA2-F67. A roughly square (6 x 6 ft) stone concentration that stands about 1.5 ft high.

Feature CA2-F68. A stone pile roughly square (6 x 6 ft) in configuration and about two feet high. A faced edge extends the length of the west side.

Feature CA2-F69. An irregularly-shaped stone concentration five to six feet across and about one foot high. Along the north side is a short (four feet), defined edge.

Feature CA2-F70. A shallow, rectangular (9 x 6 ft) depression with gently sloping sides that may have functioned as the base of a structure or tent platform.

Feature CA2-F71. A rectangular (12 x 8 ft) depression with a depth of 1.8 ft and steeply sloping sides that may have functioned as the base of a structure or tent platform.

Feature CA2-F72. An irregularly-shaped depression about two feet deep with fairly short and steep sides. The base is flat. The feature measures roughly 25 by 30 ft along its longest axes.

Campground Area 3

Feature CA3-F1. A well-preserved, dry-laid stone hut or tent foundation with interior dimensions of 9 x 7 ft and an entryway in the southwest corner open to the west. The south side is composed almost entirely of a large, oblong piece of projecting bedrock about 1.5 ft high. The west and east walls are approximately 2.5 ft wide, the north wall two feet. These walls generally are one stone wide, with the short edge on the interior and exterior sides. In the northeast corner is a rough, interior wall face standing 2.5 ft high. The other corners have partially collapsed.

Feature CA3-F2. A poorly-preserved, three-sided, dry-laid stone hut or tent foundation with interior dimensions of 10 x 6 ft and open to the southeast. The south wall is the best defined and is three feet wide and two feet high, with a rough interior face remaining in some areas. The west and north sides are defined by scattered alignments of stone rubble that do not form clearly-defined walls.

Feature CA3-F3. A three-sided, dry-laid stone hut or tent foundation measuring 9 x 7 ft and open to the west. The south wall is the best defined and is about 2.5 ft wide and 2.2 ft high, with a rough interior face. This wall is primarily one stone wide, with the lengths of the stones forming the width of the wall. The other two walls are composed of scattered rubble. The east wall measures three feet wide, and the north wall a broader 3.5 ft. The northeast and southeast corners have collapsed.

Feature CA3-F4. A square (10 x 10 ft), leveled tent platform cleared of stone, but defined along its edges by rubble.

Feature CA3-F5. A dry-laid stone wall ten feet in length with a crude face on its west side and rounded, mounded rubble on its east side. Constructed into the center base of the wall is an opening about two feet wide that probably functioned as a stove flue. A lintel stone caps this opening. On the west side of the wall lies a cleared, relatively level tent platform measuring 10 x 6 ft and defined on its west end by a scattered stone alignment.

Feature CA3-F6. A three-sided, dry-laid stone foundation of unknown function constructed against the flat face of a large bedrock boulder on its north side. The interior dimensions are 2.5 by 2.5 ft, and the interior walls stand about 1.5 ft high. The exterior sides appear slightly battered. The well-preserved south and west walls measure two feet wide, while the east wall has partially collapsed.

Feature CA3-F7. A six-foot square, stone-free tent platform defined by stone rubble along its edges. It is not leveled, however, and lies on a slope.

Feature CA3-F8. A rectangular to square (6 x 5 ft), leveled tent platform cleared of stone and defined by a slight depression.

Feature CA3-F9. A three-sided, dry-laid stone structural foundation with interior dimensions of 15 x 7 ft and open to the east. The north wall is two feet wide, the south wall 2.5 ft, and the west wall four feet. Along the east end lies a relatively stone-free, leveled platform that continues past the walls for approximately five feet. Stone rubble defines this platform along its east edge.

Feature CA3-F10. A small (4.5 x 4 ft), leveled platform cut into a steep slope and surrounded on three sides by a low-lying, mounded rubble "wall." The rough interior faces of these walls stand about one foot high; the exterior is composed of battered rubble.

Feature CA3-F11. A dry-laid stone foundation primarily consisting of a wall about 17 ft long, 2.5 ft wide and 1.5 ft high. In the center of this wall is a three-foot wide gap. Both sides of the wall are crudely faced. A short distance uphill lies a small, roughly semicircular stone stack open to the west and with a crude interior face. The exterior is battered.

Campground Area 4

Feature CA4-F1. A rectangular (12 x 8 ft) depression 1.2 ft deep with gradually sloping sides that may have functioned as the base of a structure or tent platform.

Feature CA4-F2. A three-sided, ten-foot square rubble foundation or platform open toward the east, or uphill. The three walls consist of low-lying, mounded rubble. The north and south sides measure about three feet wide; the west side is composed of battered rubble that trails down the slope. This feature may have functioned as a defensive position.

Feature CA4-F3. A rubble alignment extending north-south for approximately 125 ft, with a defined east edge. The width varies between six to eight feet, with much of the stone mounded along the east side of the feature.

Feature CA4-F4. A three-sided, dry-laid stone hut/tent foundation or defensive position measuring 6 x 4.5 ft and open to the east, or up slope. The well-defined west and north walls measure 1.5 ft wide and stand one foot high. The poorly-preserved south side consists of scattered stones. The interior is leveled and cleared of stone.

Feature CA4-F5. A rectangular to square (6 x 5 ft), three-sided, dry-laid stone hut/tent foundation or defensive position open to the east, or uphill. All three rubble walls measure about 1.5 ft wide and stand 0.5 ft high. The interior is cleared of stone and slightly built up above the slope along its west end.

Feature CA4-F6. A dry-laid stone alignment six feet long and 1.5 ft wide that extends in a general north-south direction. The roughly-faced west side stands 0.5 ft high.

Feature CA4-F7. An ill-defined, dry-laid stone hut or tent foundation with interior dimensions of 6 x 5 ft and open to the northeast. The west wall, which is the best-preserved part of the feature, measures 2.5 ft wide and stands 0.5 ft high. The other walls are not defined well enough to measure.

Feature CA4-F8. A well-constructed, dry-laid stone wall 165 ft in length that extends north-south and is coursed and faced on both the east and west sides in areas where it has not collapsed. The wall tapers in width, the north end being wider (five feet) than the south end (three feet).

Feature CA4-F9. A long, meandering, dry-laid stone wall that served as an infantry defense and possibly as a campground area boundary as well. At its south end the feature forms a corner with another stone wall, Feature CA2-F45. From that point the wall travels north in a relatively straight line before making a wide curve toward the east across the top of a ravine. The south half of the wall, along the edge of the crest, is finished on both sides, although it has collapsed in most areas. Around the curve this feature takes on the characteristics of a breastwork, with a shallow ditch behind it.

Feature CA4-F10. A rectangular (10 x 8 ft) depression 1.5 ft deep that may have functioned as the base of a structure or tent platform.

Feature CA4-F11. A three-sided, poorly-preserved and/or constructed rubble foundation or defensive work open toward the west. Low-lying rubble walls are apparent on the north and east sides, and measure 1.5 and 2.0 ft wide, respectively. The south side is very poorly defined. The poor definition of this feature makes delineation of its dimensions very difficult, but the interior dimensions approximate 6 x 4 ft.

Feature CA4-F12. A relatively well-preserved, rectangular, three-sided stone hut or tent foundation measuring 8 x 6 ft and open to the east. The walls on all three sides are about two feet wide. The northwest corners stands several courses high (two feet), with a crude interior face.

Feature CA4-F13. A six-foot square, stone-free tent platform defined by scattered stone rubble along its edges.

Feature CA4-F14. A well-preserved, dry-laid stone hut or tent foundation with interior measurements of 6 x 4 ft and an entryway in the northeast corner which faces north. The surrounding walls are comparatively thick, the east wall being three feet wide and the others 3.5 ft in width, but they stand only one foot high. A tree growing in the southeast corner has disturbed much of that area.

Feature CA4-F15. A well-preserved, three-sided, dry-laid stone hut or tent foundation with interior measurements of 8 x 5 ft and open to the east. The north and south walls measure two feet wide, the west wall 2.5 ft. The well-preserved north wall stands several courses high (1.5 ft), with a rough interior face.

Feature CA4-F16. A poorly-preserved stone hut or tent foundation with interior dimensions of 7 x 5 ft. The north and west walls measure two feet wide, the south wall 2.5 ft. The east side is composed of an ephemeral line of stone. The well-preserved south wall stands several courses high (1.5), with a rough interior face. The east end of this wall anchors to bedrock.

Feature CA4-F17. A poorly-preserved, three-sided, dry-laid stone hut or tent foundation measuring 8 x 5 ft and open to the east. The north wall is two feet wide and stands several courses high (1.5 ft), with a rough interior face. The other two walls have been disturbed extensively, however, and are scattered and ill-defined.

Feature CA4-F18. A dry-laid stone alignment eight feet in length, approximately five feet wide, and 1.5 ft high. On the east side of this feature lies a rectangular tent platform measuring 8 x 5 ft that has been cleared of stone and built up along its east side.

Feature CA4-F19. An L-shaped rubble alignment that surrounds the south and east sides of a platform area measuring approximately 20 x 12 ft. The exterior side of the south alignment trails down a slope and stands about one foot high. The east leg of the alignment measures about 3.5 ft wide and stands only slightly above surrounding grade.

Feature CA4-F20. A dry-laid stone retaining wall extending east-west and 12 ft in length, four feet wide, and 1.5 ft high along its south face. The north edge of the wall is visible, but projects only slightly above the ground surface. The south side presents a defined face, although both ends have collapsed.

Feature CA4-F21. An amorphous stone feature. The east half consists of a pile of rubble, while the west half is a finished wall about four feet wide and two to three feet high. The east end of the feature abuts directly against the base of a short, steep slope to the crest.

Feature CA4-F22. A long, crudely-constructed, dry-laid stone wall varying in width from two to four feet and at its highest points standing 2.5 ft above the surrounding grade. The north end of the wall begins at a large rock outcropping, and then extends down the east side of a ravine a short distance past Road H, where it turns sharply northward and eventually fades out.

Campground Area 5

Feature CA5-F1. A loosely-constructed stone wall/breastwork that extends north-south about 270 ft. It measures three feet wide and at its highest points stands two feet above surrounding grade. Most of this wall has collapsed. A slight ditch extends along the west side of the wall. The southern end of the wall begins at Road H, and the north end abuts against a large rock outcropping. This wall probably served as a defensive position, and also defined the eastern extent of Campground Area 5.

Feature CA5-F2. A small, circular depression four feet in diameter with a depth of approximately 1.5 ft.

Feature CA5-F3. A shallow, rectangular (8 x 6 ft) depression about one foot deep that may have functioned as the base of a structure or tent platform.

Feature CA5-F4. A fairly large, amorphously-shaped depression that measures roughly 15 x 10 ft along its longest axes and ranges from 1.3 to two feet in depth. This feature may have functioned as the base of a structure or tent platform.

Feature CA5-F5. A dry-laid stone hut or tent foundation defined on three sides by stone rubble and open to the east. The interior measures 8 x 6 ft. The north side is 3.5 ft wide, the west side about four feet, and the south side two feet. The rubble appears to have built up the feature on its north and west sides, and it projects about one foot above the surrounding grade.

Feature CA5-F6. A circular Sibley tent platform 17 ft in diameter surrounded by a shallow ditch about five feet wide and one foot deep. The platform rises slightly above the surrounding ground surface and is edged with stone in many places.

Feature CA5-F7. A rectangular (app. 8 x 6 ft) depression that is cut into the slope along its west end for a depth of 1.3 ft. The ephemeral east end is difficult to define. This feature may have functioned as the base of a structure or tent platform.

Feature CA5-F8. An ephemeral, rectangular (8-9 x 6 ft) platform defined on three sides by low-lying, slightly mounded rubble. The feature appears to be open toward the east. The mounded rubble extends only slightly above the surrounding ground surface. The north side measures about two feet wide, the west side about four feet, and the south side 3.5 ft.

Feature CA5-F9. A small, vaguely circular depression about four feet in diameter and one foot deep.

Feature CA5-F10. A five-sided, dry-laid stone hut or tent foundation that appears to have been disturbed extensively and thus may have little structural integrity remaining. The foundation measures 12 x 10 ft and stands two feet high along its interior. The walls have collapsed, leaving rubble alignments about 2.5 ft wide, and the north wall has been pushed outward. The uneven interior ground surface appears to have been dug extensively.

Feature CA5-F11. A circular, low-lying stone concentration nine feet in diameter.

Feature CA5-F12. A low-lying, dry-laid stone alignment eight feet long, three feet wide, and standing 0.5 ft high. It extends in a general east-west direction. The north side presents a fairly finished appearance.

Feature CA5-F13. A low-lying, dry-laid stone alignment eight feet long and about two feet wide. This feature has no defined face on either side and extends in a general east-west direction.

Feature CA5-F14. A low-lying stone concentration eight to ten feet across. This feature may be a collapsed stone hut foundation that probably was open toward the north.

Feature CA5-F15. An amorphously-shaped depression cut about two feet into the slope along its west end and measuring roughly 24 x 18 ft. The function of this feature is unknown.

Feature CA5-F16. A rectangular depression measuring 13 x 7 ft and 1.25 ft deep that may have functioned as the base of a structure or tent platform.

Feature CA5-F17. A seven-foot square, shallow depression cut into the base of a slope. The west end of this feature is about 1.5 ft deep, while the east end is level with the natural ground surface.

Feature CA5-F18. An amorphously-shaped depression cut into the base of a slope. The west end of this feature extends about three feet deep, while the east end lies level with the natural ground surface.

Feature CA5-F19. An amorphously-shaped depression measuring approximately 30 x 15 ft along its greatest axes, and cut into the base of a slope. The west end of this feature is about 4.5 ft deep, while the east end is roughly 0.5 ft deep.

Feature CA5-F20. A low-lying scatter of stone about 15 x 13 ft across.

Feature CA5-F21. A dry-laid stone wall/alignment extending northeast to southwest and about 10 ft long, 1.5 ft wide, and 1.2 ft high. Both sides originally were roughly faced, but much of the feature has collapsed. The ground surface on the east side of the feature vaguely appears to have been leveled, but it was too ephemeral to map.

Feature CA5-F22. A rectangular (10 x 8 ft) platform slightly cut into the slope that may have functioned as the base of a structure or tent platform.

Feature CA5-F23. An amorphously-shaped depression cut into the side of a slope. Along its greatest axes it measures roughly 18 x 12 ft. Along its west end it is 4.25 ft deep, while along the east end the depth is only one foot.

Feature CA5-F24. A vaguely rectangular (12 x 8 ft) depression cut into the slope. Along its west end this feature extends three feet deep, while along the east end the depth is only 0.5 ft. Small bedrock outcroppings border the edges of the feature. This feature may have functioned as the base of a structure or tent platform.

Feature CA5-F25. A rectangular (8 x 6 ft) depression one foot deep that may have functioned as the base of a structure or tent platform.

Feature CA5-F26. A long, linear (12 x 6 ft) depression one foot deep.

Feature CA5-F27. A rubble wall approximately 230 ft long that averages three feet in width and at its greatest height stands two feet above the surrounding ground surface. The south end of the feature abuts against a large bedrock outcropping, the north end gradually fades out. This wall curves around the east base of Charcoal Hearth 8 and probably served as a defensive position.

Campground Area 6

Feature CA6-F1. A meandering, dry-laid stone wall that extends north-south along the east edge of the crest from Campground Area 4 to Campground Area 6. It is approximately 820 ft long and averages two to three feet in width. At its highest point the wall stands four feet, but averages 2 to 2.5 ft high. On its north end, the feature begins as three discontinuous rubble segments, but further south becomes one continuous wall. This feature functioned as an infantry defensive position overlooking the east flank of the mountain.

Feature CA6-F2. A large, rectangular (25 x 12 ft) depression that is about one foot deep and may have functioned as the base of a structure.

Feature CA6-F3. A poorly-preserved, rubble wall/alignment roughly 260 ft in length and extending in a general north-south direction. The south half is fairly well defined, with some sections standing three feet high on their downhill (east) side and averaging about three feet in width. Even this section, however, consists of stacked rubble with no defined east or west faces. The north half has collapsed in most areas, and may never have been as substantial as the south half. The north end of the feature turns sharply uphill (toward the northwest) and ties into a large bedrock outcropping. This feature probably functioned as an infantry defensive position, and also defined the east edge of Campground Area 6.

Feature CA6-F4. A rounded depression about six feet in diameter and 1.5 ft deep.

Feature CA6-F5. A shallow, rectangular to square (8 x 7 ft) depression less than one foot deep that may have functioned as the base of a structure or tent platform.

Feature CA6-F6. A shallow, rectangular (9 x 6 ft) depression less than one foot deep. Mounded rubble and an earthen berm define the feature on its north and west sides. It may have functioned as the base of a structure or tent platform.

Campground Area 7

Feature CA7-F1. A poorly-preserved and/or constructed dry-laid stone retaining wall on the east edge of the crest. The feature is 25 ft long, varies in width from two to three feet, and stands two feet high on its east side. The north end abuts against a bedrock outcropping. The south end may have formed a corner and extended a short distance to the west. This retaining wall formed a platform that may have served as an artillery position.

Feature CA7-F2. An ephemeral, shallow depression measuring 7 x 6 ft and about 0.7 ft deep. The Maryland Heights hiking trail presently runs through the east end of the feature and has disturbed it heavily. This depression may have functioned as the base of a structure or tent platform.

Feature CA7-F3. An ephemeral, shallow depression measuring 10 x 6 ft and approximately 0.5 ft deep. This feature may have functioned as the base of a structure or tent platform.

Feature CA7-F4. A mounded, amorphously-shaped stone feature measuring roughly 18 x 15 ft along its exterior edges. In the interior of the mound is a small, cleared area. The most substantial part of the feature consists of a mounded stone pile about three feet high on the east side of the cleared area. Along the east side of this mound lies a possible stone face extending north-south, but it is obscured by the rubble. A very rough wall face also extends along the west edge of this rubble, about four feet from the east edge. The function of this feature is unknown.

Feature CA7-F5. An ephemeral, rectangular depression measuring roughly 9 x 6 ft and less than one foot deep. The present Maryland Heights hiking trail runs through the feature and has disturbed it extensively. This depression may have functioned as the base of a structure or tent platform.

Feature CA7-F6. An ephemeral depression measuring about 7 x 6 ft and less than one foot deep that may have functioned as the base of a structure or tent platform.

Campground Area 9

Feature CA9-F1. A well-defined tent platform measuring 13 x 12 ft. On the north side is a shallow cut into the slope; on the south side is readily-apparent fill.

Feature CA9-F2. A circular depression about six feet in diameter and two feet deep. Stone lines the west edge.

Feature CA9-F3. A poorly-defined, circular Sibley tent platform about 15 ft in diameter and edged with stone.

Feature CA9-F4. A circular depression about seven feet in diameter and 1.5 ft deep.

Feature CA9-F5. A rectangular (8 x 5 ft) depression about two feet deep. The west end has steep sides, while the east end has shallow, sloping sides. This feature may have functioned as the base of a structure or tent platform.

Feature CA9-F6. A dry-laid stone hut or tent foundation measuring 7 x 6 ft along its interior sides. Only the interior north side has a defined face, which stands 1.5 ft high. The other walls are composed of rubble. The south side is defined along its west end, but there is very little stone along the east half, suggesting a possible entryway. Stone rubble mounds against the exterior north and west sides of the foundation. Bricks, both whole and fragments, lie scattered across the feature.

Feature CA9-F7. A poorly-defined, dry-laid stone hut or tent foundation consisting of mounded stone and earth alignments about three feet in width along its north, west and south sides. Around the exterior sides of the alignments lies a shallow ditch. The exterior dimensions of the feature are 12 x 12 ft (the interior is too vaguely defined to be measured).

Feature CA9-F8. An exceptionally well-preserved, dry-laid stone hut or tent foundation that appears to be constructed on the east end of a charcoal hearth, as the ground surface on the west and south side of the feature is level and the soil is black. The interior dimensions of the foundation are 9.7 x 7 ft. The interior faces of all four walls are well-defined and constructed of medium-sized fieldstones with some small chinking stones. The foundation walls are uniformly 2.5 ft wide. In the southeast corner lies a south-facing entryway that is two feet wide. The south end of the east wall is built into the cut side of the platform, thus forming no true exterior southeast corner. A rubble embankment mounds against the exterior sides of the four walls.

Feature CA9-F9. An oddly-shaped, three-sided, dry-laid stone foundation open to the south. The north wall functions as a retaining wall, as it stands three feet high on its south side, but lies flush with the ground surface on its north side. This wall is about 20 ft long. The shorter east and west wing walls extend southward from the longer retaining wall, but are in a collapsed condition. The interior of the foundation and the area to the south form a leveled platform measuring about 20 x 15 ft. Stone edges this platform along its south and west sides.

Feature CA9-F10. A small, circular depression four feet in diameter and approximately 2.5 ft deep.

Feature CA9-F11. A massively-constructed, dry-laid stone structural foundation in poor condition. The exterior dimensions are roughly 25 x 22 ft. The west wall is the best defined, and measures 3.5 ft wide and one foot high. Very little remains of either the north or south walls, except for traces of mounded earth and rubble alignments. The east wall is about 3.5 ft wide, but does not stand very high.

Feature CA9-F12. A small, scattered stone concentration measuring approximately 7 x 6 ft along its widest points and standing about 1.5 ft above the surrounding ground surface.

Feature CA9-F13. A loosely-constructed, three-sided, dry-laid stone foundation built against a large, flat-sided bedrock outcropping along its east side. The interior dimensions are roughly 6 x 4 ft. The character of its construction, and the fact that it sits on a slope overlooking the main plateau, suggests that this feature may have been modified into a modern deer hunting screen.

Feature CA9-F14. A dry-laid stone hut or tent foundation measuring 11.5 x 8 ft along its interior sides. The well-defined interior faces of the north and east walls stand about three feet high. Much of the west wall has slumped, but in areas where it has not collapsed it stands the same height. Both the interior and exterior faces of the south wall stand about 1.2 ft high. There probably was a south-facing entrance in the southeast corner, but it has become obscured by rubble. All the walls measure 2.5 ft wide. Rubble and earth mound around the exterior sides of the walls.

Feature CA9-F15. A rectangular depression measuring roughly 15 x 9 ft. The north end cuts into the slope and extends about three feet deep, while the south end is a shallower one foot in depth. This depression may have functioned as the base of a structure or tent platform.

Feature CA9-F16. A triangular-shaped depression measuring about 7.5 x 4 ft along its longest axes. The feature has a stone edge along its northeast side, and is one foot deep.

Feature CA9-F17. A dry-laid stone hut or tent foundation with interior dimensions of 10 x 7 ft. Portions of all four walls remain standing to a height of 2.5 ft. Rubble and earth mound against the exterior sides of the east and north sides. The west side serves somewhat as a retaining wall, as it is built into the side of a terrace. There probably was a south-facing entrance in the southeast corner, but it has become obscured by wall collapse.

Feature CA9-F18. An unusual feature that probably is a dry-laid stone structural foundation, with overall exterior dimensions of approximately 33 x 16 ft. The south wall functions as a retaining wall. The west and north sides consist of concentrated rubble alignments, as does a "wall" in the center of the feature that joins with both the north and south sides. The east end of the feature is open, giving it a sideways "A" shape.

Feature CA9-F19. A two-sided, dry-laid stone alignment with low-lying walls two feet wide. The north and east ends of this feature blend into the slope. Enclosed within the walls is a cleared and possibly leveled area lined with stone along its north and east sides. The alignment of the feature is skewed to the natural slope.

Campground Area 10

Feature CA10-F1. A rubble wall extending east-west for approximately 1,100 ft and standing 2.5 ft high. The wall ranges from three to six feet in width. Near the east end of the feature lies a five-foot wide gap in the wall. Near the west end is a second gap that appears to have been created by removing part of the wall. The west end hooks toward the south before ending. This rubble wall served as an infantry breastwork originally enclosed within log cribbing. It also defines the north edge of Campground Area 10.

Feature CA10-F2. A two-sided, dry-laid stone hut or tent foundation with interior dimensions of 8 x 6 ft. The low-lying walls measure two feet wide.

Feature CA10-F3. A rectangular (8 x 6 ft) cleared and leveled tent platform cut into the slope on its east side. Along the west side of the feature extends a low-lying rubble edge about two feet wide and eight feet in length that functions as a retaining wall for the platform.

Feature CA10-F4. A rectangular (12 x 8 ft) cleared and leveled tent platform cut into the slope on its east side. Along the west side of the feature lies a rubble retaining wall one foot high, one foot wide, and 12 ft long that supports the platform.

Feature CA10-F5. A poorly-defined, leveled tent platform cleared of stone and measuring seven feet square. The feature cuts slightly into the slope along its east side. Along the west side extends a low-lying, dry-laid stone edge about 1.5 ft wide and seven feet long that supports the platform.

Feature CA10-F6. A low-lying, dry-laid stone alignment eight feet in length and two feet wide that extends in a northwest to southeast direction.

Feature CA10-F7. A poorly-defined, leveled and cleared tent platform measuring 8 x 6 ft and cut slightly into the slope along its east side. Along the west side is a low-lying rubble edge about 1.5 ft wide and eight feet long that supports the platform.

Feature CA10-F8. A poorly-defined, dry-laid stone alignment 11.5 ft long and 2.5 ft wide. It ranges from 0.5 to 2 feet in height and extends east-west.

Feature CA10-F9. A possible three-sided, dry-laid stone hut foundation or tent platform open to the west. The feature consists of a cleared and leveled platform measuring 6 x 5 ft, with a stone alignment two feet wide and 1.5 ft high along its north side. Faint evidence exists of possible crudely-constructed walls or alignments along the east and south sides.

Feature CA10-F10. A rectangular (12 x 7 ft), leveled tent platform cut into the slope on its east side and cleared of stone. Along the west side of the feature is a poorly-defined stone edge about one foot wide and 12 ft long that supports the platform. A flat-sided bedrock outcropping standing 4.4 ft high defines the north side.

Feature CA10-F11. A leveled tent platform cleared of stone and measuring 8 x 7 ft. All four sides are edged with stone. In the center of the east edge lies a small pile of stones with a rough west face that stands 1.5 ft high and is 2.5 ft wide.

Feature CA10-F12. A poorly-preserved, low-lying stone alignment about ten feet long and two feet wide that extends north-south.

Feature CA10-F13. A small, low-lying, rectangular stone concentration measuring 6 x 3.5 ft.

Feature CA10-F14. A three-sided, dry-laid stone hut or tent foundation open to the west except for protruding bedrock along the north half of the west side. The interior dimensions are 8 x 6 ft. The south and east walls consist of crudely-stacked rubble three feet in width and one foot high. The north side is composed of scattered stone.

Feature CA10-F15. A stone alignment eight feet long and 2.5 ft wide. The feature stands about 0.7 ft high and extends in a northwest to southeast direction.

Feature CA10-F16. A stone alignment/wall eight feet long and three feet wide. The west face consists of crudely-stacked stone 1.3 ft high. On the west side of the feature lies a possible cleared tent platform measuring about eight feet square, but it was too vague to map.

Feature CA10-F17. A three-sided, dry-laid stone hut or tent foundation open to the southeast, or up slope. The leveled interior cuts slightly into the slope. The west wall measures 5.3 ft long and stands about 0.7 ft above grade. The north wall is 4.5 ft long, the south wall 2.5 ft, and both lie flush with the ground surface. All three walls measure two feet wide.

Feature CA10-F18. A rectangular tent platform cleared of stone and measuring 9 x 6 ft. The flat face of a bedrock outcropping defines the south side of the feature. Scattered stones line the other edges.

Feature CA10-F19. A stone alignment seven feet long and 1.5 ft wide extending north-south. The west side has a crude face that stands about one foot high.

Feature CA10-F20. A low-lying stone alignment six feet long and two feet wide that extends north-south.

Feature CA10-F21. A stone alignment six feet long and two feet wide that extends north-south. At its highest point it stands about one foot.

Feature CA10-F22. An irregular, three-sided, dry-laid stone hut or tent foundation open to the west with exterior dimensions of 10 x 5 x 13 ft. The walls stand about one foot high and measure 1.5 ft wide. Rubble fills the east half of the foundation interior. The west end of the south wall anchors on bedrock.

Feature CA10-F23. A stone alignment ten feet long and three feet wide that extends north-south. The feature stands one foot high. The north end abuts against bedrock.

Feature CA10-F24. A circular platform, perhaps for a Sibley tent, cleared of stone and 22 ft in diameter. The east end of the feature has been cut into the slope to a depth of 1.5 ft, while the west end appears to have been built up.

Feature CA10-F25. A low-lying stone concentration roughly rectangular in shape and measuring approximately 8 x 6 ft. Along the south side of the feature lies a rough edge composed of small, stacked stones. The surface of this stone concentration is relatively flat, suggesting that it may have been used as a platform. A short distance from the northeast corner sits a possible spring outlet, with stacked stones arranged in a semicircle.

Feature CA10-F26. A stone alignment ten feet long and 1.5 ft wide extending in a general north-south direction. Small stacked stones form a rough face on the west edge about one foot in height. The north end of the feature anchors to a bedrock outcropping.

Feature CA10-F27. A circular depression about 11 ft in diameter and three feet deep.

Feature CA10-F28. A circular depression about 11 ft in diameter and one foot deep.

Feature CA10-F29. A large stone alignment about 85 ft in length extending from northwest to southeast. This alignment ranges from four to ten feet in width, with no defined edges. At its highest point the mounded stones stand about two feet above the surrounding ground surface.

Feature CA10-F30. A loosely-stacked, mounded stone pile measuring approximately 10 x 9 ft and standing two feet high.

Feature CA10-F31. A rectangular (11 x 8 ft), leveled tent platform cut into the slope on its east side.

Feature CA10-F32. A stone alignment eight feet in length and 1.5 ft wide. Along the west side of the feature is a crude face that stands 1.3 ft at its highest point. The north end abuts against a bedrock outcropping.

Feature CA10-F33. A low-lying, roughly circular stone concentration about six feet in diameter.

Feature CA10-F34. A rectangular stone pile measuring 13 x 5 ft and composed of stone loosely thrown together. At its highest point the feature stands about two feet.

Feature CA10-F35. A poorly-preserved, low-lying stone alignment eight feet long and two feet wide that extends in a general north-south direction.

Feature CA10-F36. A rectangular stone concentration measuring approximately 12 x 5 ft and standing 1.5 ft high.

Feature CA10-F37. A triangular-shaped stone pile measuring 15 x 12 ft along its longest axes. The highest point lies near the east end and stands about 2.5 ft above the surrounding grade.

Feature CA10-F38. A low-lying stone alignment extensively disturbed by an uprooted tree along its north end. The truncated length of the feature is 6.5 ft, and the original width three feet.

Feature CA10-F39. An irregularly-shaped stone pile that measures roughly 13 x 9 ft at its widest points. The highest point stands about two feet above surrounding grade.

Feature CA10-F40. A large, rectangular hole cut into the slope along its east end and measuring 40 x 20 ft. The west end lies at ground level. Along the south edge is the hint of a berm; along the east end of the north edge is a well-defined, mounded berm. The base of the feature is flat and relatively broad. This hole probably functioned as a magazine or other storage area.

Feature CA10-F41. A built-up, earthen and rubble platform on the west edge of the plateau. Crude rubble embankments define the feature on its north and west sides. On the other two sides, the platform blends into the natural slope. The interior dimensions are 20 x 12 ft. This feature probably served as an artillery position associated with the nearby Spur Battery.

Feature CA10-F42. A built-up, earthen and rubble platform on the west edge of the plateau. Crude rubble embankments (less substantial than those defined in CA10-F41) define the feature on its north and west sides. On the other two sides, the platform blends into the natural slope. The interior dimensions are 15 x 8 ft. This feature probably served as an artillery position associated with the nearby Spur Battery.

Campground Area 11

Feature CA11-F1. A poorly-preserved, dry-laid stone hut or tent foundation with interior dimensions of 6.5 x 5 ft. The north, east and south walls measure 1.5 ft wide and stand about 0.7 ft high. The west side is comprised of a built-up stone edge that serves as a platform support. This side is about 3.5 ft wide, with the east edge flush with the interior ground surface.

Feature CA11-F2. A three-sided, dry-laid stone hut or tent foundation open to the north. The walls consist of loosely-stacked rubble, although the south wall has a rough interior face that stands two feet high. The east wall measures about 1.2 ft wide, the south wall 1.5 ft, and the west "wall"--mounded rubble that extends down the slope--five feet wide.

Feature CA11-F3. A poorly-preserved, dry-laid stone hut or tent foundation open to the north and measuring 10 x 9 ft along its interior sides. The south wall has a crude interior face about one foot high and two feet wide. The east side consists of an edge of stone with no defined wall. The west side is the best defined, being about 2.5 ft wide with an exterior face that stands about 2.5 ft high.

Feature CA11-F4. A three-sided, dry-laid stone hut or tent foundation with rough interior dimensions of five feet square and open to the west. The three walls have a crude interior face about one foot high. The east and south walls measure two feet wide, while the south wall is one foot wide.

Feature CA11-F5. A curved, dry-laid stone alignment about 15 feet in length and three feet wide. The feature stands about 2.5 ft high and extends in a general north-south direction.

Feature CA11-F6. A possible loosely-stacked, dry-laid stone alignment six feet long and three feet wide. This poorly-defined feature extends only 0.5 ft above the surrounding grade.

Feature CA11-F7. A poorly-preserved tent platform measuring 6 x 5 ft with stone edges along the north and west sides. These low-lying edges average about two feet in width.

Feature CA11-F8. A dry-laid stone retaining wall seven feet long and two feet wide extending east-west. The feature has a well-defined north face that stands about 2.5 ft high. The south edge lies almost flush with the ground surface.

Feature CA11-F9. A low-lying, dry-laid stone alignment nine feet long and about one foot wide extending in a general north-south direction. This alignment marks the west edge of a very poorly-defined tent platform.

Feature CA11-F10. A two-sided, dry-laid stone alignment. The south side measures three feet long, the west side ten feet. They average about 1.5 ft in width and stand 1.5 ft high. On the east side of the feature is a long, low-lying bedrock outcropping with a flat west face that forms the third side of a small enclosure open to the north.

Feature CA11-F11. A dry-laid stone alignment seven feet long and 1.5 ft wide. Both sides of the alignment are roughly faced and stand one foot high. Along the east side of the alignment lies a possible stone-paved and edged platform measuring 7 x 4 ft and open to the northwest.

Feature CA11-F12. A well-preserved, three-sided, dry-laid stone hut or tent foundation open to the west with interior measurements of 7.5 ft x 4-5 ft. The width varies from four feet at the east end, against the slope, to five feet at the west end. The north wall is constructed on top of a stone shelf; the interior face of this wall stands 2.3 ft high, while the exterior blends with surrounding large boulders. The east wall stands 3.5 ft high, with its east side built into the slope. The south wall is 2.5 ft high and about two feet wide.

Feature CA11-F13. A dry-laid and slightly curving stone retaining wall eight feet long and 1.5 ft wide. The west face stands 2.5 ft high and supports a leveled, stone platform on its east side upon which the Feature CA11-F12 hut foundation sits. The south end of the feature abuts against a boulder. A stone alignment (Feature CA11-F14) abuts against the middle of the base of the retaining wall on its west side.

Feature CA11-F14. A dry-laid stone alignment five feet long, one stone wide (widest point is 1.5 ft), and 1.5 ft high. The east end abuts against the west face of a stone retaining wall (Feature CA11-F13). The west end appears to extend to the end of a possible stone platform.

Feature CA11-F15. A three-sided, dry-laid stone hut or tent foundation open to the west and measuring 7 x 4 ft. The three walls are about two feet wide. The east wall is built into the slope and has a crude, interior face that stands about three feet high.

Feature CA11-F16. An oddly-shaped, but well-preserved stone feature. The primary component is a curved, crudely-constructed dry-laid stone wall that extends around the east half of the feature. The northern half of this wall is free-standing, two feet wide and three feet high. The back edge of the southern half disappears under a stone platform (Feature CA11-F17) constructed above it. Boulders define the south end of the feature, while along the west side extends a very small retaining wall that stands about one foot high. This retaining wall supports a leveled, stone surface in the interior. At its widest points, the interior of the feature measures approximately 7 x 6 ft.

Feature CA11-F17. A well-preserved stone platform measuring about 6 x 4 ft along its widest points. A dry-laid stone retaining wall about two feet high and 1.5 ft wide supports the platform. The south end of the retaining wall abuts against bedrock, while the base sits on top of part of the wall defining the east side of Feature CA11-F16. Along the north and part of the east sides of the feature is a free-standing, crudely-stacked rubble wall that sits on top of bedrock. The east end of this wall disappears or merges into the rocks on the slope behind the feature.

Feature CA11-F18. A relatively ephemeral, dry-laid stone platform supported by a crudely-constructed, curving retaining wall along its west side. This wall measures slightly more than five feet in length, 1.5 ft wide, and stands two feet at its highest point. The stone slope defines the back, or east, edge of the platform. The elliptically-shaped interior measures approximately 5 x 2.5 ft at its widest points.

Feature CA11-F19. An ephemeral, small, and dry-laid stone platform supported by a crude, curving retaining wall along its west side. The wall is about 1.5 ft wide and at its highest point stands 2.5 ft high. Both ends blend into the slope. The elliptically-shaped platform area measures about 7 x 2 ft along its widest points.

Feature CA11-F20. A small, dry-laid stone platform supported on its west side by a crudely-constructed retaining wall. The wall averages 1.5 ft in width and at its highest point (in the center) stands two feet. The ends of the wall blend into the slope. The platform area forms an ellipse and measures approximately 5.5 x 2.5 ft along its widest points.

Feature CA11-F21. A leveled platform measuring about 6 x 5 ft with a dry-laid stone retaining wall along its west side. The retaining wall is battered on its exterior (west) side, but averages about two feet in width and at its highest point stands 2.5 ft. The ends of the wall are free standing.

Feature CA11-F22. An irregularly-shaped, leveled platform measuring roughly 9 x 7 ft along its widest points. A curved, dry-laid stone retaining wall supports the west side of the platform. This wall is battered on its exterior side, but measures 1.5 ft at its widest point along the top edge. At its highest point the wall stands about two feet. Both ends anchor against large stones.

Feature CA11-F23. A well-preserved, stone-floored platform with dimensions of 9 x 6 ft. Along its west edge the platform is supported by a dry-laid retaining wall 1.5 ft wide that stands three feet at its highest point. On both the north and south sides of the platform are crude, low-lying stone alignments about 1.5 ft wide. The east side of the platform is open to the steep slope behind it.

Feature CA11-F24. A platform measuring roughly 7 x 5 ft with a curved stone embankment along its west side that had no defined west face. The ends of the embankment blend into the slope. The eroded platform slopes to the west.

Feature CA11-F25. A leveled platform measuring 7 x 6 ft with a crudely-constructed and sloping dry-laid stone retaining wall along its west side. The top of this wall measures 1.5 ft wide, and it stands two feet at its highest point. The ends of the wall blend into the slope. The other sides of the platform are edged with stone.

Feature CA11-F26. A platform measuring 6 x 5 ft supported by a stone edge/embankment along its west side that had no defined west face. The stone edge is 2.5 ft wide and at its highest point stands 1.5 ft. The eroded platform slopes toward the west.

Feature CA11-F27. A well-preserved, roughly rectangular and leveled platform measuring 6 x 5 ft. A crude, dry-laid stone retaining wall about 2.5 ft wide and 1.5 ft high supports the platform along its west side. Along the south side of the feature is a dry-laid stone wall 1.5 ft wide with a well-defined north face and a crude south face, both of which stand about two feet high. The east end of this south wall blends with the slope, while the west end appears to form a corner with the retaining wall. Stone edges define the platform on its east side and along the east half of the north side; it is open on the west half of the north side.

Feature CA11-F28. A leveled platform measuring six feet square supported by a stone edge/embankment along its west side. This edge is about 1.5 ft wide and at its highest point stands 1.2 ft.

Feature CA11-F29. An ephemeral, leveled platform measuring roughly 6 x 5 ft with a stone edge along its west side. This edge has an extremely crude west face that stands 1.5 ft at its highest point, and it is about 1.5 ft wide.

Feature CA11-F30. A well-preserved, dry-laid stone hut or tent foundation with interior dimensions of 6 x 5 ft. The south wall measures 1.5 ft wide and stands 2.5 ft high. The east end of this wall blends into the steep slope above the feature, while the west end forms a corner with the west wall. The west wall is constructed on top of a bedrock ledge, and measures 1.5 ft wide and 1.5 ft high. Both the south and west walls have crude interior and exterior finished faces. A built-up retaining wall about four feet high with a very crude west face defines the east side of the feature. This retaining wall supports a wall segment (Feature CA11-F34) constructed above it. In the northwest corner is a north-facing entryway that is about 2.2 ft wide. A rock edge defines the remainder of the north edge of the feature.

Feature CA11-F31. A poorly-preserved, leveled platform supported by a stone embankment along its west edge. This embankment trails down the slope, and thus does not have a defined face. The platform measures 7 x 5 ft and is defined on the other three sides by stones around its edges.

Feature CA11-F32. A long, narrow (8.5 x 5 ft) and leveled platform edged by stone on all four sides. The west edge consists of a line of stone, one stone thick, laid on top of a bedrock ledge that appears to support this feature.

Feature CA11-F33. A leveled platform heavily disturbed by a tree growing in its northwest corner. Along its west side, the feature is defined by a sloping stone edge that measures two feet wide across the top. The south side consists of a free-standing wall three feet thick and 2.5 ft high, with a crude interior face. Stone edges define the north and east sides.

Feature CA11-F34. A dry-laid stone wall seven feet long, ranging from two to 2.5 ft in width, and standing 2.5 ft high. The east end blends into the stone embankment that forms the west side of Feature CA11-F33.

Feature CA11-F35. A small (4.5 x 4 ft), leveled platform with a curved, dry-laid stone retaining wall along its west edge that is longer than the platform. The two ends of the wall blend into the slope. The other three sides of the platform are edged with stone. The east side forms a rough retaining wall about 2.5 ft high that is built against the slope above the feature.

Feature CA11-F36. A small, irregularly-shaped and leveled platform with rough dimensions of 5 x 4.5 ft. Along the west edge stretches a very crude, dry-laid stone retaining wall that stands about two feet high and is 1.5 ft wide along its top edge. The north end of the wall anchors onto a bedrock outcropping, while the south end is disturbed by a large tree.

Feature CA11-F37. A short, ill-defined, dry-laid stone retaining wall six feet in length that stretches from one bedrock outcropping to another. The crude west face stands 2.5 ft high. The east edge is not visible.

Feature CA11-F38. A poorly-preserved, irregularly-shaped platform with rough interior dimensions of 8 x 6 ft. Along the west edge is a curved, crudely-built stone edge. The highly-eroded platform slopes toward the west.

Feature CA11-F39. A leveled, elliptical platform that measures 8 x 4 ft at its widest points. Along the west edge lies a crude, slightly curved and battered stone edge. Both ends of this stone edge blend into the slope.

Feature CA11-F40. A roughly rectangular (8 x 5 ft) platform with a crude, slanting stone embankment along its west side. The platform is edged with stone along its other sides. This eroded feature slopes to the west.

Feature CA11-F41. An ephemeral platform measuring roughly 10 x 5 ft. Along its west side is a crude, sloping, dry-laid stone retaining wall 2.5 ft high. The wall disappears into the slope on its north end, but comes to a finished end along its southern extent. Stone edges the east and south sides of the eroded platform, which slopes to the west.

Feature CA11-F42. A rectangular (8 x 5 ft) platform with a crude dry-laid stone retaining wall along its west edge. In its center, this wall stands about two feet high and is 1.5 ft wide. Some stone edges the north and east sides of the platform, while the south side is vague and undefined. The eroded platform slopes to the west.

Feature CA11-F43. A well-defined, leveled platform measuring 6 x 4 ft and edged by stone on all four sides. Along the north half of the east side is stacked stone with a crude west face that contains an opening near the base. This opening is about 1.5 ft wide and capped by what appears to be a small lintel stone that is about three feet long and extends the length of the stack. The east side of this stack blends into the slope behind it.

Campground Area 12

Feature CA12-F1. A dry-laid stone retaining wall eight feet long and 1.5 ft wide extending in a general north-south direction. The west side stands 1.7 ft high, while the east edge is buried under the slope.

Feature CA12-F2. An ephemeral, leveled tent platform measuring roughly six feet square. Along the west edge of the platform stretches an oddly-shaped stone embankment of sloping rubble, narrow at the north end and substantially wider at the south end. A line of stone defines the south end of the platform, while the other sides are eroded and difficult to define.

Feature CA12-F3. An amorphously-shaped, low-lying stone concentration measuring roughly 7 x 4 ft at its widest points. On the east side of this concentration lies a possible leveled platform, but it was too vague to map.

Feature CA12-F4. A leveled tent platform measuring 7 x 6 ft with an ephemeral stone edge along its west side. This stone edge is about two feet wide, with a battered west face that stands one foot high.

Feature CA12-F5. A three-sided, dry-laid stone hut or tent foundation open to the west. A short distance to the west lies a dry-laid stone retaining wall which stands one foot high along its west side and supports the leveled area on which the foundation is constructed. The foundation is in poor condition, with only the interior face of the east wall presenting a finished appearance. This slightly-battered wall face stands 2.5 ft high. The exterior side of the east wall is built into the slope. The south and north sides of the foundation consist of splayed alignments of scattered stone.

Feature CA12-F6. A dry-laid stone hut or tent foundation with interior dimensions five feet square. The west wall has an exterior side that stands 1.2 ft high; this wall also is about 1.5 ft wide. The west half of the north wall is relatively intact and 1.5 ft wide, but it does not present a finished wall face. Very little remains of the south wall except a line of stones. The intact section of east wall has a crude west face that stands two feet high and is 1.5 ft wide. The south half of this wall appears to have collapsed or been pushed over, perhaps by a tree.

Feature CA12-F7. A low-lying, dry-laid stone alignment six feet in length. Only the west face is visible, and it stands only one stone high (0.5 ft).

Feature CA12-F8. A leveled tent platform measuring 8 x 7 ft with a stone edge along its west side that forms a crude, dry-laid retaining wall. This wall stands about 1.5 ft high and averages 1.5 ft in width. The north end of the platform is much better defined than the south end.

Feature CA12-F9. A poorly-preserved, leveled tent platform measuring approximately 6 x 5 ft, with stone edges on its west and south sides. These stone edges do not form a defined face, but are roughly 1.5 ft wide and no more than one foot high.

Feature CA12-F10. A three-sided, dry-laid stone hut or tent foundation with interior dimensions of 6 x 5.5 ft and open to the north. The east wall is the best preserved, with an interior wall face 1.1 ft high and 1.5 ft in width. The other walls have collapsed.

Feature CA12-F11. A poorly-preserved, three-sided, dry-laid stone hut or tent foundation with interior dimensions of approximately 6 x 5 ft and open to the north. The east wall measures 1.5 ft wide, the other walls about one foot. The walls presently stand a single stone high.

Feature CA12-F12. An ephemeral, leveled tent platform measuring roughly 8 x 6 ft, with a crude, dry-laid stone retaining wall along its west side. Rubble is packs against the west face of that wall, obscuring its height and width. Stone edges partly define the east and south sides of the platform.

Feature CA12-F13. An extensively-modified dry-laid stone hut or tent foundation. This modification becomes especially apparent in the northeast corner, where stone "walls" have been constructed on top of rotting logs. The exterior dimensions of the feature measure roughly ten-feet square. The south and north walls are well-preserved and stand two feet high. In contrast, both the east and north walls consist of crudely stacked small fieldstone and show signs of heavy modification.

Feature CA12-F14. An ephemeral, rectangular (9 x 7 ft) tent platform with a scattered stone edge along the west side that supports the slightly built-up platform. The eroded platform slopes to the west.

Feature CA12-F15. An ephemeral, three-sided, dry-laid stone hut or tent foundation open to the west and with rough interior dimensions of 7 x 5 ft. The walls consist of scattered rubble with variable widths and no defined faces. A tree growing along the east end of the feature has disturbed it heavily. The foundation slopes steeply to the west, with rubble trailing down the slope.

Feature CA12-F16. A three-sided, dry-laid stone hut or tent foundation open to the west and with interior dimensions of 7 x 6 ft. The narrow south and north walls measure about 1.2 ft wide, and have defined interior faces that stand about 1.2 ft high. The east wall is ill-defined.

Feature CA12-F17. An oddly-shaped, low-lying stone concentration that measures about 11 ft square at its widest points. In shape, the feature resembles a three-sided stone foundation open to the northeast, but otherwise it lacks definition.

Feature CA12-F18. A dry-laid stone alignment six feet long and 1.5 ft wide. The feature extends in a general north-south direction, with a crude, low-lying west edge.

Feature CA12-F19. A dry-laid stone alignment five feet long and one foot wide. The west edge forms a crude face 1.1 ft in height.

Feature CA12-F20. A poorly-preserved, dry-laid stone hut or tent foundation with approximate exterior dimensions of 14 x 8 ft. The four ill-defined walls have collapsed. A large tree growing in the center of the feature has damaged it extensively.

Feature CA12-F21. An ephemeral, leveled tent platform measuring roughly 11 x 6 ft. A crude, sloping stone edge serves as a retaining wall along the west side of the platform.

Feature CA12-F22. A poorly-preserved, dry-laid stone hut or tent foundation with interior dimensions of 8 x 5 ft. The feature is composed of loosely-stacked rubble walls. Of these, the north wall is the best defined, with a section of rough, interior wall face that stands 1.3 ft high. The east and west walls consist of scattered rubble alignments, while the south wall forms a more concentrated alignment.

Feature CA12-F23. A very poorly-preserved, dry-laid stone hut or tent foundation with little integrity. The interior measures roughly 8 x 6 ft. The west wall is the most substantial part of the feature and is five feet wide. The north side consists of an alignment of single-width stones, while the east wall is undefinable. The feature may be open to the southwest.

Feature CA12-F24. The possible remnants of a dry-laid stone foundation. The feature consists of two crude, low-lying stone alignments, each four feet in length, that form a corner with each other.

Feature CA12-F25. A dry-laid stone alignment seven feet long and 2.5 ft wide. This alignment is composed of large, haphazardly-stacked fieldstone standing two feet high, but with no definable face on either side.

Feature CA12-F26. A circular Sibley tent platform 20 ft in diameter that is rises slightly above the surrounding ground surface. Around the outside edge of the platform stretches a well-defined ditch four feet wide and one foot deep. This feature sits north of the Exterior Fort and is not shown on the base map for Campground Area 12.

Feature CA12-F27. A poorly-preserved, three-sided, dry-laid stone hut or tent foundation open to the north. The east wall measures 1.3 ft wide, the north wall 2.5 ft, and the west wall two feet. Otherwise the walls lack much definition and stand less than one foot high.

Feature CA12-F28. A leveled tent platform measuring 6 x 5.5 ft with stone edges along the south and west sides. These edges are 1.5 ft in width, low-lying (only one stone high), and have no defined wall faces.

Feature CA12-F29. A dry-laid stone alignment five feet long and about 1.5 ft wide. The feature has a crude west face less than one foot high.

Feature CA12-F30. A small, dry-laid stone foundation with interior measurements of 6 x 2.5 ft. The walls are one foot wide on all four sides and stand only one stone high. The function of this small feature remains unknown.

Feature CA12-F31. A dry-laid stone hut or tent foundation with interior dimensions of 6 x 4.5 ft. The feature is built into the slope and does not have a defined east wall. The south wall has an interior face that stands 1.7 ft high in one small area. The west wall measures two feet wide and is constructed of large fieldstone stacked on top of one another. The low-lying north wall is three feet wide. In the northwest corner is a west-facing entryway two feet in width.

Feature CA13-F23. An ephemeral, rectangular (10 x 8 ft), and leveled tent platform with a stone edge along its west side. The west side of this stone edge has a crude face that stands about 1.2 ft high and is one foot wide.

Feature CA13-F24. A leveled tent platform measuring 12 x 11 ft with a stone edge on its west side that forms a crude, dry-laid retaining wall standing 1.3 ft high and about 1.5 ft wide.

Feature CA13-F25. A dry-laid stone alignment 16 ft long and one foot wide that extends in a north-south direction. The feature has a crude west face that at its highest point stands only one foot. The east edge is not visible.

Feature CA13-F26. A stone concentration measuring approximately 11 x 9 ft at its widest points and about one foot high.

Feature CA13-F27. A well-preserved, leveled tent platform cut into a steep slope and measuring 10 x 6 ft at its widest points. Along the west side of the feature is a stone edge that forms a crude, dry-laid retaining wall two feet high and two feet wide.

Feature CA13-F28. A long, narrow trench about 1.5 ft deep with dimensions of roughly 15 x 6 ft. Along the west edge of the trench extends an undefined stone edge.

DOMESTIC SITES FEATURE DESCRIPTIONS

Lot K Domestic Site (18WA408)

Feature LK-F1. A dry-laid stone retaining wall that defines the east boundary of the site and separates it from Road A. The wall extends a total distance of 210 ft, although sections have slumped and collapsed. The west edge of the wall lies flush with the ground surface, while the average height of the east face is three feet (the highest point is five feet). The wall varies from two to three feet in width, although the better-preserved sections are two feet wide. The southern end of the wall is broken off and appears to have been heavily disturbed. The base of the retaining wall lies several feet above the present-day roadbed.

Feature LK-F2. A stone retaining wall that stretches across the north half of the site between Features LK-F3 and LK-F4, and which supports an artificially-leveled terrace upon which sits Feature LK-F6, a substantial house foundation. The feature is split into two sections by Road A2L. North of this road, the wall basically is well preserved and constructed of fieldstone set in a fine, light brown, dirt-based mortar. It stands 3.5 ft high and is two feet wide at the top. The south half of this northern section has partially collapsed, however, revealing the apparent remains of a second, dry-laid wall behind it. South of the road the feature is in a ruined condition and consists primarily of rubble along the slope below the terrace that the retaining wall supports. The south end of the feature joins with Feature LK-F4.

Feature LK-F3. A dry-laid stone wall that defines the north boundary of the site and part of the boundary for Lot K as well. From its eastern end above Road A the wall runs in a fairly straight course for approximately 265 ft. The east half of the wall varies from 2 to 3.5 ft in thickness and stands about three feet high. The west half, which begins at a point where the entire wall shifts to the south two feet, has a more uniform width of 2.5 ft and stands 3.3 feet high.

Feature LK-F4. A dry-laid stone wall that roughly parallels Feature LK-F3 to the north and divides the site into two basically equal halves. The wall begins about 40 ft west of Road A and extends up the slope approximately 265 ft. Along intact sections the wall ranges from two to three feet in width, and stands 2 to 2.5 ft high. In several areas the wall has collapsed.

Feature LK-F5. A stone foundation (10 x 9 ft) in very poor condition and constructed of fieldstone set in a fine, light brown, dirt-based mortar. Only the southwest corner remains intact and stands about two feet high. The interior is rubble-filled. This feature has been identified as a stone smokehouse.

Feature LK-F6. A double-chambered stone foundation (32 x 17 x 33 x 20 ft) constructed of fieldstone set in a fine, light brown, dirt-based mortar; all of the walls in this feature are two feet wide. This feature represents the foundation of a mid-nineteenth century house that probably was constructed in two stages.

The exterior dimensions of the east chamber are 20 x 15 ft. Dominating the north side of the east chamber is a virtually intact stone chimney that measures 6 x 4 ft along its base and stands approximately 16 ft high. On the south side of the chimney is a small hearth capped by a large stone lintel 5.2 ft long. The bottom half of the hearth has been blocked up with laid stone, while a small, round hole has been cut into the flue above the lintel. About halfway up the chimney the sides slope inward to form a narrow neck the upper third of the stack. Extending six feet south from the base of the hearth is a ledge that ends in a battered stone retaining wall three feet deep. This wall defines the north side of a small (11.5 x 11.5 ft) cellar hole. Along the east wall of the chamber is a four-foot wide entryway that leads into this cellar hole.

The exterior dimensions of the west chamber are 18 x 17 ft. In the center of the west wall of this chamber are the ruins of a chimney base (6 x 4 ft). The intact hearth is capped by a lintel stone 4.2 ft long. The interior face of the west wall ties into the east edge of the chimney base. The chamber interior is rubble filled.

Feature LK-F7. A dry-laid stone retaining wall 40 ft in length and located on the west side of Feature LK-F6. The wall stands 3.3 ft at its highest point and is 2.5 ft wide. Most of the wall is intact except for a small collapsed section along the south end.

Feature LK-F8. A stone foundation (15 x 11 ft) constructed of fieldstone set in a fine, light brown, dirt-based mortar. Historically, this foundation supported a log or frame stable. The north wall of this foundation is incorporated into Feature LK-F3, although the walls of the latter feature abut against the northeast and northwest corners of this structure. The south wall has almost totally collapsed, while the other three walls stand about 3.5 ft high. No entryway is apparent.

Feature LK-F9. An irregularly-shaped stone pile concentrated against the north face of Feature LK-F3. Along its longest axes it measures 23 x 14 ft and stands 2.5 to three feet high. This feature actually lies in Lot J and is associated with stone clearing in the King Domestic Site (18WA407) garden.

Feature LK-F10. An irregularly-shaped stone pile concentrated against the north face of Feature LK-F3. Along its longest axes it measures 20 x 15 ft and stands about 1.5 ft high. A large bedrock protrusion anchors the east end of the stone pile. In the center of the pile is a small, circular depression, with the majority of the stones piled around its edges. This feature actually lies in Lot J and is associated with stone clearing in the King Domestic Site (18WA407) garden.

Feature LK-F11. A dry-laid stone shelf that projects from the south edge of Feature LK-F3. The shelf begins 25 ft west of Feature LK-F8 and extends 65 ft to a point where Feature LK-F3 shifts a couple of feet to the south and subsumes the stone shelf as part of its wall. The shelf extends 2.5 ft south from Feature LK-F3 and stands about 2.5 ft high. Much of the west half of this feature has collapsed. The function of this feature remains unclear--perhaps it represents an earlier boundary wall.

Feature LK-F12. A dry-laid stone shelf that projects from the south edge of Feature LK-F3. The shelf begins at the point where Feature LK-F3 shifts about two feet to the south. It then extends up slope approximately 75 ft before angling slightly north and disappearing under Feature LK-F3. This poorly-preserved feature has collapsed in most places. Along intact sections it extends three feet from Feature LK-F3 and stands two feet high. The function of this feature remains unclear--perhaps it represents an earlier boundary wall.

Feature LK-F13. A dry-laid stone retaining wall remnant with a narrow, artificially leveled terrace on its west side. Almost all of the wall has collapsed, leaving a fairly heavy linear concentration of stone approximately 120 ft in length. The most substantial standing section is about 3.5 ft high and four feet wide. Even this section only extends about halfway down the steep slope between the narrow terrace above and a broader terrace below associated with Feature LK-F7. A second retaining wall may be buried behind the first.

Feature LK-F14. A small, basically rectangular-shaped stone pile measuring roughly 16 x 14 ft and about 1.5 ft high. The stone mounds against protruding bedrock.

Feature LK-F15. A dry-laid stone wall that partly defines the west boundary of the north half of the site. This wall is 45 ft long and sits exactly halfway between the west ends of Features LK-F3 and LK-F4. Although much of the wall has collapsed, standing sections are 2.5 ft wide and about 2.2 ft high.

Feature LK-F16. A well-preserved, dry-laid stone retaining wall 30 ft long, 4 feet high and 2.5 ft wide. On its south end the wall either abuts or joins the north face of Feature LK-F4. The retaining wall supports an artificially leveled terrace on its west side, upon which lies Feature LK-F17, a stone foundation.

Feature LK-F17. A small stone foundation (13.5 x 15 x 13.5 x 16 ft) constructed of fieldstone set in a fine, light brown, dirt-based mortar. In the east wall is an entryway three feet wide. The west wall and west half of the north wall have almost totally failed; the northeast corner, on the other hand, stands 5.3 ft high. The walls are two feet wide. The interior of the structure is filled with rubble from collapsed walls. A log or frame farm building (possibly a stable) stood on this foundation.

Feature LK-F18. A dry-laid stone wall that defines the west boundary of the south half of the site. It extends 200 ft from Feature LK-F4 to the south boundary of Lot K. The north end of the wall curves toward the east, leaving a small gap between it and Feature LK-F4. Near the south end of the feature is a gap in the wall five feet wide. North of this point the wall is fairly well preserved, stands three feet high and is 2.5 ft wide. South of the gap the wall is in a ruined state and forms a broad rubble concentration.

Feature LK-F19. The remnants of a dry-laid retaining wall along the west edge of a narrow, artificially leveled terrace (Terrace 2). Only a few short sections of this crudely constructed wall, about two feet in height, still stand. The remainder of the feature consists of a rubble concentration 200 ft in length along the slope between Terraces 1 and 2.

Feature LK-F20. A linear stone concentration that appears to serve as a very crude, dry-laid retaining wall defining the north end of the short slope between Terraces 2 and 3. This concentration is about 20 ft long and varies from three to four feet in width.

Feature LK-F21. A linear stone concentration that resembles a very crudely constructed dry-laid retaining wall, but does not present a finished appearance. This concentration lies on a slope below the east edge of Terrace 3; it is approximately 32 ft long and varies from four to five feet in width.

Feature LK-F22. A linear stone concentration that resembles a very crudely constructed dry-laid retaining wall, but does not present a finished appearance. This concentration defines the east edge of Terrace 4 and lies on the short, steep slope below it. It is about 70 ft long and five to seven feet wide.

Feature LK-F23. A small, amorphous stone concentration that marks the northern extent of Terrace 6 and lies on the slope below it. Along its longest axes it measures 15 x 12 ft.

Feature LK-F24. A shallow, rectangular depression (12 x 10 ft) with some stone in its center. The feature lies below the south end of Feature LK-F22 and marks the northern extent of Terrace 5. A small shed or outbuilding probably stood at this site.

Feature LK-F25. A linear stone concentration about 30 ft long that lies along a gradual slope. The north half of the feature forms a shallow, linear stone concentration, while the south end forms a small, rounded pile of stone.

Feature LK-F26. A small, irregularly-shaped stone concentration. Along its widest dimensions it measures approximately 16 x 11 ft.

Feature LK-F27. An ephemeral stone foundation (20 x 17 x 20 x 16 ft) constructed of fieldstone set in a fine, light brown, dirt-based mortar. This foundation supported a small log dwelling constructed around 1904. Only the east half of the structural foundation, however, presently is defined by stone walls, which are 1.5 ft wide and about 0.7 ft high. Both the north and south walls extend toward the west only four feet before disappearing under rubble and overburden. Extending perpendicularly from the east wall is an interior wall that extends four feet before disappearing under a mound of brick rubble. This wall apparently divides the feature into two interior chambers, one five feet wide and the other ten feet. The south half of the east foundation wall is about one foot wider than the north half and projects further to the east. The west half of the feature is defined by vague, slightly mounded earthen alignments that probably cover stone foundations beneath them. A heavy concentration of brick rubble covers the interior and south end of the feature. The bricks all appear to be machine made and some have eroded impressed lettering that cannot be deciphered.

Extending south from the north foundation wall is a short (4.5 ft) line of stone that disappears under the brick rubble. Only the east face of the stone is visible. In the southeast corner of the feature are remnants of two wooden beams or joists that may have functioned as supports for the superstructure and/or floor. These beams extend in a north-south direction, one on top of the east foundation wall and the other about 2.5 ft to the west. A sawed board with tongue-and-groove molding lies across the two beams. Scattered across the feature are additional, half-buried wooden beams.

Feature LK-F28. A small, shallow and odd-shaped cellar depression (13 x 5.5 x 10.5 x 6 ft) cut into the slope. With the exception of the east side, the interior edges are lined with dry-laid fieldstone. Along the north and south sides are fairly well-defined walls standing 1 to 1.7 ft high, while the west side is composed of battered rubble. Around the outside of these three sides is mounded stone rubble, with a lesser concentration on the west side. The east side of the feature consists of a stone rubble concentration about three feet wide that extends the length of the feature. A small, mid-nineteenth century log house stood on the foundation. the bottom, stone-lined level functioned as a cellar.

Feature LK-F29. A poorly-preserved, dry-laid stone retaining wall that supports the built-up, leveled area on which Feature LK-F27 is constructed. The wall is 42 ft long, 1 foot wide, and averages about 1.4 ft high in areas where it has not collapsed. Both ends of the wall appear broken off.

Feature LK-F30. An artificially leveled, rectangular platform measuring 9 x 6 x 8 x 6 ft and cut into a short, steep slope between Terraces 3 and 4. A small shed or outbuilding probably stood at this site.

Feature LK-F31. An irregularly-shaped stone pile composed of small- to medium-sized fieldstone thrown against a small bedrock outcropping. The pile measures roughly 20 x 12 ft along its broadest points.

Lot P Domestic Site (18WA412)

Feature LQ-F18. The remnant of a dry-laid, curving stone wall about 90 ft long and averaging 1.5 ft wide. This feature does not appear to have ever been very substantial and consists principally of collapsed rubble.

Feature LQ-F21. A poorly-preserved, dry-laid stone foundation with shallow cellar hole. Interior dimensions of the feature are 12 x 20 ft. Only the south and east sides are clearly defined and consist of stone wall remnants two feet in width. A four-foot wide gap cuts through the middle of the east side and may have functioned as an entryway. Along the exterior of the south and east sides is scattered, low-lying stone rubble. The feature appears cut into the gradual slope that characterizes the surrounding area. A mid-nineteenth century dwelling, probably of log construction, stood on this spot.

Lot Q Domestic Site (18WA413)

Feature LQ-F1. A dry-laid stone wall that defines the eastern extent of the site. It extends approximately 560 ft--basically the entire length of the east boundary of Lot Q--and is remarkably straight. The wall is broken off on both ends. At its highest point the wall stands 3.5 ft above grade. The top of the wall generally measures two feet across, although the slightly battered base is wider than the top.

A nine-foot wide gap that appears to date to the construction of the wall separates the south third of the wall from the northern two-thirds. Road A2L passes through this gap and probably provided the main access into the site off of Road B, the historical Thirty-Foot Reserve Road. The wall parallels the west edge of Road B.

Feature LQ-F2. A dry-laid stone wall that defines the south boundary of Lot Q. This wall is broken up into several sections. The segment on the east side of Road A (the modern fire road) begins about 20 ft west of the southeast corner of Lot Q. The broken off east end of the wall probably once joined with the south end of Feature LK-F1, as there is a substantial amount of stone rubble in the immediate vicinity. About halfway between the east end of the wall and the fire road, the wall angles northward for a short distance before returning to its westerly course. The east half of the wall stands about four feet high and is much straighter and better constructed than the section between the short jog to the north and the fire road. The west end of the latter segment terminates along the east edge of Road A in a streaming trail of rubble. The wall obviously was pushed aside during construction of the road.

The middle section of Feature LQ-F2 begins at the west edge of Road A and extends up slope along the south boundary of Lot Q for roughly 75 ft before forming a corner with Feature LQ-F3. In configuration it is similar to the east half of the first segment. A gap eight feet wide separates this middle section from the westernmost segment of the wall. The west section extends 50 ft up the mountainside before ending. It averages three feet in width and follows the lot boundary.

Feature LQ-F3. The ruins of a dry-laid stone wall. The south end of this feature ties into the west end of the middle section of Feature LK-Q2, and probably was constructed at the same time. The wall extends northward along a meandering course for roughly 170 ft and then turns 90 degrees toward the east. After stretching approximately 20 ft the defined wall ends. The feature continues for an additional 90 ft, however, as an ephemeral, low-lying stone alignment. The main wall varies from two to three feet in width, and at its highest point stands four feet. The ephemeral alignment generally is one stone high and 1.5 to 2 feet wide.

Feature LQ-F4. The ruins of a dry-laid stone wall about 120 ft in length and varying from 2 to 2.5 ft in width. The feature presently resembles a linear stone concentration. The westernmost 50 ft of the wall extend in a general east-west direction, while the remainder angles toward the northeast.

Feature LQ-F5. An ephemeral stone concentration with two defined sides that lies on the north side of Feature LQ-F3. Together with Feature LQ-F3, this concentration encloses an area measuring 6 x 10 ft and may have provided the base for a small shed or outbuilding.

Feature LQ-F6. A fairly ephemeral, dry-laid stone foundation with exterior dimensions of 14 x 16 ft. The low-lying west and south wall remnants are two feet wide. The north side is composed of a linear earthen mound that appears to cover stone lying underneath it. The east side is the least defined and presently consists of slumped rubble. There is no apparent entryway. The type of building constructed here and its function presently is unknown.

Feature LQ-F7. An ephemeral, scattered, and low-lying stone alignment that defines part of the west boundary of the site. This feature is about 65 ft long and varies from two to six feet in width. It consists primarily of scattered stone, some of which are stacked on top of each other. The south end abuts against a large rock outcropping that separates this feature from Feature LQ-F3. The north end trails off shortly before reaching the southwest corner of Feature LQ-F11.

Feature LQ-F8. A large, D-shaped depression about four feet deep and measuring approximately 26 x 20 ft. It is identified as a cellar hole to a mid-nineteenth century house. The feature was created by construction of a large, semicircular earthen mound on the down slope, or eastern, side of the feature. The relatively-straight west edge of the depression is lined with scattered stone that may have formed part of a wall. Associated with the large depression on its west side are two smaller depressions cut into the slope. The larger of the two measures 12 ft square, the smaller 8 x 7 ft. Both are fairly shallow.

Feature LQ-F9. A concentrated stone alignment about 45 ft long and varying from three to four feet in width. This feature stands less than one foot high, although it appears that it may once have been a wall that subsequently slumped to the east. The alignment may have defined the front yard of a dwelling (Feature LQ-F8) that was located a short distance to the west.

Feature LQ-F10. An amorphously-shaped stone concentration that stands 1 to 1.5 ft high. At its widest points it measures roughly 7 x 16 ft. The function of this feature presently is unknown.

Feature LQ-F11. A prominent, dry-laid stone wall that defines most of the west edge of the site and all of the north side. On the north side the wall basically follows the boundary line between Lots P and Q. This north extension is approximately 135 ft long and fairly straight except for a slight jog towards the south near the Lot P Domestic Site. The west side of the wall stretches roughly 340 ft. Near Feature LQ-F14 is a definite break in this section of the wall. A short (50 ft) extension on the south end stretching toward the east defines the southern edge of the terrace on which Feature LQ-F14 sits. The east end of this south wall segment presently consists of scattered rubble. Overall, the top of the wall averages two feet in width, the base slightly more. At its highest point, behind Feature LQ-F14, the wall stands 4.5 ft high.

Feature LQ-F12. A dry-laid stone foundation or enclosure with interior measurements of 12 x 8 ft that is tucked into the corner formed by the south and west sides of Feature LQ-F11. The east and north sides of the feature appear to abut against that wall. They average 2 to 2.5 ft wide and stand about one foot high. There is no apparent entryway.

Feature LQ-F13. An amorphously-shaped stone rubble concentration composed of very small stones that overlie bedrock. At its widest points the feature measures 12 x 12 ft. This feature probably resulted from stone clearing on surrounding lands.

Feature LQ-F14. An ephemeral, poorly-defined stone foundation that sits on a built-up terrace along the west edge of the site and once supported a log or frame dwelling. The interior dimensions are about 12 x 18 ft. Only the west wall is well-defined; it is two feet wide and stands about 1.5 ft high. Rubble defines the west end of the north wall, but does not form a definite wall face on either side. The remainder of the north wall is visible only as a low-lying, linear earthen mound. A more substantial mounded earthen alignment defines the east side of the feature. The east end of the south side is defined by aligned stones with little clear definition. The west end of the south side is quite substantial and projects southward about three feet farther than the ill-defined east half; it may be part of a chimney base. A large amount of rubble lies inside the west half of the foundation and around the exterior of the south side. An arc of large stones extends from the southeast corner of the structure.

Feature LQ-F15. A dry-laid stone retaining wall with two sides that forms an enclosure on the north side of Feature LQ-F14. The outside faces (those edges facing away from the enclosed area) are fairly well defined, while the interior edges are rough and unfinished. The wall varies in width from 1.5 to 2 ft and the outside faces stand about one foot high.

Feature LQ-F16. A rectangular-shaped depression measuring approximately 8 x 12 ft and cut into the slope. Across the east, or down slope side, is a mounded earthen apron. Several old rodent burrows are present within the feature. This depression probably represents the site of an outbuilding.

Feature LQ-F17. A relatively long and narrow rectangular-shaped depression or leveled area cut into the slope with dimensions of roughly 8 x 15 ft. A mounded rubble and earth apron defines the feature along its east side. It probably represents the site of an outbuilding.

Feature LQ-F18. [see Lot P]

Feature LQ-F19. A dry-laid, low-lying stone wall/retaining wall. Presently in ruins, the feature does not appear to have ever been very substantial. The wall extends approximately 57 ft; the rubble from this wall averages about four feet in width. A steep and well-defined earthen terrace slope extends eastward at a right angle from this feature. This slope extends 50 ft before ending.

Feature LQ-F20. A small stone pile that stands about two feet high. At its widest points the feature measures about 11 x 12 ft. The east edge of the stone pile aligns with the east edge of Feature LQ-F19.

Feature LQ-F21. [see Lot P]

Lot S Domestic Site (18WA414)

Feature LS-F1. A dry-laid stone wall that defines the east and south boundary of the site. The east side extends approximately 50 ft, the south side 160 ft. Most of the east wall has collapsed; the few intact sections stand about one foot high and are 2.5 ft wide. The north end of this side loses definition near Road B1R. The south wall is well-preserved, especially east of Feature LS-F3. In this section the south face of the wall is battered and at its highest point stands 4.2 ft. The north face is not battered and stands only two feet high as it serves as a retaining wall. The top of the wall is two feet wide. West of Feature LS-F3, the south wall meanders and is not as well constructed.

Feature LS-F2. A crudely-constructed, dry-laid stone wall that defines the north boundary of the site. Most of the wall has collapsed; intact sections average about 2.5 ft wide and stand two feet high. The crooked wall ends near the point where Road B1R turns toward the southwest.

Feature LS-F3. A dry-laid stone retaining wall that supports the terrace on which the Feature LS-F5 stone foundation sits. The wall is about 55 ft long and two feet wide. It abuts against Feature LS-F1 on its south end, while the north end appears broken off. Much of the wall has collapsed. The east face of the intact sections stands 2.3 ft high. The top west edge lies flush with the ground surface.

Feature LS-F4. An ephemeral, linear stone alignment that extends westward from the present north end of Feature LS-F3 toward the rubble around the northeast corner of Feature LS-F5. It consists of a scattered, indefinite row of fieldstone. This alignment varies from 1 to 1.5 ft in height and 1 to 1.5 ft in width.

Feature LS-F5. A stone foundation (30 x 22 ft) with cellar hole cut into the slope. The walls average two feet in width and are constructed of relatively massive fieldstone set in a fine, light brown, dirt-based mortar. The west wall serves as a retaining wall; its intact south half stands four feet above the rubble-filled interior. The poorly-preserved north and south walls are free-standing, although mounded rubble packs against the exterior faces of both walls. Eight feet from the exterior southeast corner, the south wall forms a right angle and extends 1.3 ft toward the south. Rubble obscures further definition of this wall segment, although it may be part of a chimney foundation. The east wall is in poor condition and only the south third is defined. A line of mounded rubble extends along the outside edge of the east foundation wall. This feature most certainly represents the remnants of a fairly substantial house which had a log or frame superstructure.

Feature LS-F6. A rubble embankment/retaining wall that defines part of the west boundary of the site. It begins about ten feet west of Feature LS-F5 and extends in a southwesterly direction for roughly 110 ft. Only the northernmost five feet of this feature form a finished retaining wall. This short segment stands about one foot high along its east face and is one foot wide. The remainder of the feature is comprised of a linear stone concentration that varies from 7 to 13 ft in width. Naturally-sited boulders are incorporated into its construction.

Feature LS-F7. A crudely-constructed, dry-laid "wall" composed of large fieldstones loosely stacked on top of each other, generally one stone in width. Bedrock outcroppings seem to have been incorporated as much as possible. The feature begins a few feet east of Feature LS-F6 and meanders toward the east for approximately 65 feet, roughly paralleling the south wall of Feature LS-F1. At its highest point the wall stands 3.5 ft, and it varies in width from one to three feet.

Lot T Domestic Site 1 (18WA415)

Feature LT-F1. A dry-laid stone foundation with shallow cellar hole cut into the slope and interior dimensions of 12 x 16 ft. This foundation most likely supported a log or frame house. The west side of the foundation consists of a retaining wall that has collapsed in most places; extant sections stand about three feet high. The walls along the other sides are free-standing. The east wall is 2.5 ft wide and in good condition; the north and south walls are two feet wide and in poor condition. In the center of the east wall lies an apparent entryway about three feet wide. Twentieth-century trash fills the interior of the feature and covers the surrounding area.

Feature LT-F2. A dry-laid stone retaining wall with two sides, both of which stand 1.5 ft high along their exterior faces. Much of the interior edge is not visible, but where it can be seen the wall is about 1.5 ft wide. The east flank of the feature is 20 ft long, while the south flank extends ten feet before disappearing under overburden and heavy vegetation. The north end of the east flank abuts against the southeast corner of Feature LT-F1. This retaining wall supports an artificially-leveled terrace located on the south side of the Feature LT-F1 stone foundation.

Feature LT-F3. A short, dry-laid stone retaining wall that stretches seven feet from the northeast corner of Feature LT-F1 to the exterior south side of Feature LT-F4. The east face of this wall stands 2.2 ft high; no west face is visible. Remnants of whitewash exist on the stones. This feature supports a small, artificially built-up terrace wedged between Features LT-F1 and LT-F4.

Feature LT-F4. A small, basically three-sided stone foundation with cellar hole cut into the slope and interior dimensions of 8 x 8.5 ft. The west and north walls function as retaining walls and stand about 1.5 ft high. The free-standing south wall is 1.5 ft high and 1.5 ft wide. Only a small section of an east, free-standing wall extending from the northeast corner is evident. Remnants of a hard, cement-based mortar coat the interior faces of the walls. Some whitewash can be distinguished on the exterior face of the south wall. The function of this feature is unknown.

Feature LT-F5. A stone retaining wall with two sides. The south wall is 20 ft in length and has collapsed in two places; its west end abuts against the northeast corner of Feature LT-F4. The east flank is seven feet long and forms the west side of a narrow stream channel. The feature is bonded with a hard, cement-based mortar and covered by vestiges of whitewash. At its highest point the retaining wall stands three feet.

Feature LT-F6: A stone retaining wall with two sides. The south wall is 25 ft long and has collapsed in one place. The west flank is 5.5 ft long and forms the east side of a narrow stream channel. The feature is bonded with a hard, cement-based mortar and covered by remnants of whitewash. At its highest point the retaining wall stands three feet high--most likely its historical height as there is no wall collapse in front of standing sections.

Feature LT-F7. A short, free-standing stone wall measuring 11 ft long by 1.7 ft wide and standing 1.2 ft high. The wall is set in a heavy, cement-based mortar, which also almost totally covers the east face. The feature sits on the east edge of a small stream that passes through the site and abuts against Feature LT-F6 on its north end.

Feature LT-F8. A stone retaining wall with two sides. The west flank extends 21 ft along the east edge of a small stream. The visible section of the south wall is only ten feet long, but the east end disappears under heavy vegetation and thus probably is longer. Cement-based mortar covers the exposed west face along the stream. At its highest point the wall stands 1.5 ft above the stream. This feature probably is a continuation of Feature LT-F7, as the two bond together.

Feature LT-F9. A dry-laid stone retaining wall with two sides. The east wall extends approximately 50 ft along the west edge of a small stream. One section of this wall has collapsed, and the north half is in very unstable condition. The shorter south side extends about 11.5 ft before disappearing under vegetation and overburden. At its highest point the east side stands seven to eight feet above the stream.

Lot T Domestic Site 2 (18WA416)

Feature LT-F10. A standing, poured-concrete spring box 6.5 ft square. The top is flat and stands from 5 to 8.5 ft above the surrounding ground surface depending upon which side is measured. This feature lies on the east bank of a small stream and does not appear to be in use, although water still issues from it.

Feature LT-F11. A dry-laid stone wall about 110 ft long and averaging 2.5 to 3 feet in width which defines the south boundary of the site. At its highest point, the south face stands about three feet high, but much of the wall has collapsed.

Feature LT-F12. Irregularly-shaped stone pile composed of small to medium-sized fieldstones. At its widest points the feature measures roughly 12 x 18 ft and stands about two feet high. It most likely resulted from clearing stone off the surrounding ground surface.

Feature LT-F13. Stone pile roughly rectangular in shape and composed of small- to medium-sized fieldstones. At its widest points the feature measures roughly 12 x 18 ft and stands about two feet high. It most likely resulted from clearing stone off the surrounding ground surface.

Feature LT-F14. A poorly-preserved stone foundation with cellar hole and approximate interior dimensions of 18 x 14 ft. The foundation is constructed of fieldstone set in a fine, light brown, dirt-based mortar. The west wall functions as a retaining wall and stands about three feet high. The middle third of this wall has collapsed into the interior. The north wall also functions as a retaining wall. From the northwest corner this wall extends about eight feet before disappearing. A large tree growing in the northeast corner of the structure appears to have destroyed the east half of the north wall. The free-standing south wall extends only about five feet from the southwest corner before ending. At this point a concentrated rubble alignment angles away from the foundation toward the southeast for a distance of about 27 ft. Only a hint remains of an east foundation wall, which appears to be buried. This feature probably formed the foundation for a log or frame dwelling.

Feature LT-F15. An ephemeral, small dry-laid stone foundation with approximate interior dimensions of 4 x 5 ft. Only the west and south walls remain. Both function as retaining walls and stand two feet high along their interior faces. The west wall is 1.5 ft wide. The interior is comprised of a small, cellar-like depression filled with rubble.

Feature LT-F16. A short, dry-laid wall segment 20 ft in length and ranging from 2.5 to 3 ft in width. This feature is constructed of large fieldstone, with a finished east and west face. Both ends abut against bedrock outcroppings.

Feature LT-F17. A dry-laid stone wall about 180 ft long and averaging three feet wide. Most of the wall has collapsed, and at its highest points the feature stands only about 1.5 ft.